TO EVALUATE AND ANALYZE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS

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Submitted By

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Dedicated

to

my beloved

Grandparents

May their memory forever be a comfort and a blessing.

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ABBREVIATIONS

BTS –	Blood Transfusion Services
GDG-	Guideline Development Group
GRC-	Guidelines Review Committee
ERG-	External Review Group
NACO –	National AIDS Control Organization
TTI-	Transfusion Transmitting Infections
HBV-	Hepatitis B Virus
HCV-	Hepatitis C Virus
HIV-	Human Immunodeficiency Virus
AIDS-	Acquired Immunodeficiency Syndrome
HAV-	Hepatitis A Virus
WHO-	World Health Organization
GDG-	Guideline Development Group
DIID-	Donation-Induced Iron Deficiency
DDR-	Donor Deferral Registry
CUE-	Confidential Unit Exclusion
CJD-	Creutzfeldt-Jakob Disease
MSM-	Men Having Sex With Men
HHV8-	Human Gamma Herpes Virus 8
NSAIDs-	Non-Steroidal Anti- Inflammatory Drugs

HPV-	Human Papillomavirus
BCG-	Bacille Calmette Guerin
G6PD-	Glucose-6–Phosphate Dehydrogenase
TRALI-	Transfusion-Associated Acute Lung Injury
HTN-	Hypertension
BP-	Blood Pressure

ABSTRACT

Introduction: Blood donor selection criteria based on science and regulatory rules influence donor as well recipient safety and demographics. Deferral leads to loss of precious whole blood donors and blood units available for transfusion purposes. Knowledge about the rate and causes of donor deferral can guide us the recruitment and retention strategy for whole blood donors.

Aims & Objectives: To evaluate and analyze the blood donor pattern and its causes among blood donors and to review its influence on blood safety.

Material & Methods: A prospective analysis of records of the donors, for 1 year, from January to December 2020 is to be done, in order to find out the rate and causes of deferral in different age groups.

Clinical Significance: The pattern of donor deferral identified is an important tool for blood safety and also provides key areas to focus on a region or policy formulation nationally for donor selection as well ensure donor safety. The value of determining donor deferral pattern by categories described is in calling back donors deferred due to temporary reasons and can help retain pool of motivated blood donors.

Results: The blood donor deferral rate was 2.3%, the deferral rate in various categories was 20.1%, 3.1%, 2.9%, 49.6%, 6.9%, 8.1%, 11.2%,and 1.7% in Category 1, Category 2, Category 3, Category 4,Category 5,Category 6,Category 7 & Category 8 respectively. The majority of deferrals were temporary deferrals (77.4%) of young donors. The maximum number of donors deferred (49.6 %) due to a history of medical causes followed by 20.1% due to low hemoglobin. History of intake of medicines, skin diseases, other infectious diseases, respiratory diseases, blood donation interval< 3 months and tattooing, hypertensive heart diseases and thyroid disorders were other major causes identified.

Conclusions: Establishment of effective measures is needed in regard to consider the effect of donor deferrals on future availability of donor and donor return and to monitor necessity and effectiveness of deferrals and their reasons. As percentage of temporary deferral is higher, they should be efficiently managed, counselled, educated and encouraged for future donation which can compensate the increasing demand of blood donors.

Keywords: Blood safety, blood donors, donor deferral, donor selection, permanent deferral, temporary deferral.

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INTRODUCTION

Blood transfusion services (BTS) have the responsibility to collect blood only from donors who are at low risk for any infection that could be transmitted through transfusion and who are unlikely to jeopardize their own health by blood donation. A rigorous process to assess the suitability of prospective donors is therefore essential to protect the safety and sufficiency of the blood supply, and safeguard the health of recipients of transfusion and blood donors themselves, while ensuring that suitable donors are not deferred unnecessarily.

These World Health Organization (WHO) guidelines, *Blood donor selection: guidelines on assessing donor suitability for blood donation* have been developed to assist blood transfusion services in countries that are establishing or strengthening national systems for the selection of blood donors.[1] They are designed for use by policy makers in national blood programmes in ministries of health, national advisory bodies such as national blood commissions or councils, and blood transfusion services.

WHO guidance on criteria for the selection of blood donors was first published in the distance learning materials, *Safe Blood and Blood Products, Module 1: Safe Blood Donation*[1] in 1994. These earlier recommendations were developed on the basis of international best practice but did not have a clear evidence base. In 2009, the WHO Blood Transfusion Safety programme (WHO/BTS) convened a guideline development group (GDG) to prepare evidence-based recommendations on criteria for assessing the suitability of blood donors. The GDG also recognized the need to provide guidance on establishing national systems for blood donor selection.

BLOOD DONOR SELECTION

The primary responsibility of a blood transfusion service is to provide a safe, sufficient and timely supply of blood and blood products. In fulfilling this responsibility, the BTS should ensure that the act of blood donation is safe and causes no harm to the donor.[2] It should build and maintain a pool of safe, voluntary non-remunerated blood donors and

take all necessary steps to ensure that the products derived from donated blood are efficacious for the recipient, with a minimal risk of any infection that could be transmitted through transfusion.

All prospective blood donors should therefore be assessed for their suitability to donate blood, on each occasion of donation. The purpose of blood donor selection is to:

- Protect donor health and safety by collecting blood only from healthy individuals
- Ensure patient safety by collecting blood only from donors whose donations, when transfused, will be safe for the recipients
- Identify any factors that might make an individual unsuitable as a donor, eithertemporarily or permanently
- Reduce the unnecessary deferral of safe and healthy donors
- Ensure the quality of blood products derived from whole blood and apheresis donations
- Minimize the wastage of resources resulting from the collection of unsuitable donations.

Information provided by 164 countries to the WHO Global Database on Blood Safety indicates that, worldwide, more than 92 million blood donations are collected annually. Of these, an estimated 1.6 million units are discarded due to the presence of infectious markers for TTI, including HIV, hepatitis B, hepatitis C and syphilis. In addition, at least 13 million prospective donors are deferred from donating blood due to anaemia, existing medical conditions or the risk of infections that could be transmitted through transfusion.[3] The scale of these discards and deferrals highlights the need for effective blood donor selection to minimize the unnecessary deferral of suitable donors, and the donation of blood by unsuitable donors that subsequently has to be discarded; this will reduce the wastage of resources, including donor and staff time, consumables and screening tests, and also avoid needless discomfort to donors.

In 2005, World Health Assembly resolution WHA58.13 [4] urged Member States, inter alia, to establish or strengthen systems for the recruitment and retention of voluntary, non-remunerated blood donors

and the implementation of stringent criteria for donor selection. World Health Assembly resolution WHA63.12 [5] in 2010 also urged Member States to take all necessary steps to update their national regulations on donor assessment and deferral.

The aim of *Blood donor selection: guidelines on assessing donor suitability for blood donation* is to guide and support countries in establishing effective national systems for blood donor selection, including policies, guidelines and criteria in order to ensure the safety of the recipients of blood and blood products and protect donor health and safety.

The donor selection criteria recommended in these guidelines apply to donors of whole blood, red cells, platelets, plasma and other blood components, donated as whole blood or through apheresis, including plasma for fractionation. These include a) criteria that have worldwide applicability and should be applied uniformly, and b) criteria that require local adaptation in the light of epidemiological data, demography, the health of the population, the screening and confirmatory tests performed and the available technology.

METHODOLOGY

In 2009, the WHO Blood Transfusion Safety programme scoped the guidelines to define the content and assess the topics on which recommendations on blood donor selection were required. It identified three key questions to be addressed:

1. What are the components of an effective national system for assessing the suitability of prospective donors to donate blood?
2. What are the criteria for the acceptance or deferral of prospective blood donors to avoid blood donation by unsuitable individuals in order to protect the health and safety of recipients of transfusion and ensure patient safety?
3. What are the criteria for the acceptance or deferral of prospective blood donors to protect donor health and safety while avoiding the unnecessary deferral of suitable donors?

An early draft of the guidelines was pilot-tested in Ethiopia in 2010 and revised drafts were circulated electronically to members of the ERG in

2010 and 2011; their comments were carefully reviewed by the GDG and incorporated into the guidelines. The guidelines were submitted for review and approval to the WHO Guidelines Review Committee (GRC), which reviewed and provided guidance on the process and methodology for evidence retrieval and the assessment and synthesis of evidence to ensure that the evidence collected was unbiased, up- to-date and relevant. Detailed comments received from the GRC were addressed systematically and the guidelines were modified to incorporate these comments.

A further external review of the advanced draft of the guidelines to assess the feasibility of their implementation was undertaken by participants in an inter- regional workshop on blood donor selection and donor counselling for priority countries in the African and Eastern Mediterranean regions, June 2011, Nairobi, Kenya [6] and, relevant comments were addressed by the GDG in developing the final draft.

Evidence base

A systematic literature search was conducted to collect and review the evidence (1995–2011, and also in 2012 for selected topics) on defined physiological conditions, diseases and risk behaviours in relation to the suitability of individuals for blood donation. The literature search covered the more widely consulted published literature from peer-reviewed journals, regional journals, book chapters, institutional and other knowledge databases, as well as lesser-known published literature and unpublished and non-reviewed “grey literature”.

As these guidelines have been developed particularly for use in countries that have not yet established national systems for blood donor selection, the literature search strategy was specially designed to collect literature from low and middle- income countries.

The national system for blood donor selection should include:

- National policy and legislative framework
- National guidelines and criteria on blood donor selection
- Public information and donor education
- Suitable infrastructure and facilities
- Adequate financial and human resources

- Quality system, including standard operating procedures, documentation and records
- Donor hemovigilance Monitoring and evaluation.

NATIONAL POLICY AND LEGISLATIVE FRAMEWORK

Every country should have a national blood policy that defines the strategies for blood donor recruitment, selection, deferral, blood screening for TTI, confirmatory testing, donor notification, counselling and referral. The national blood policy should be supported and enforced by a legislative and regulatory framework and implemented through national guidelines. The legislative framework should define the fundamental principles and ethics of blood donation and donor selection.

Blood donors have a responsibility to self-defer if they are aware of having been exposed to any risk of an infection or a known health condition or treatment that could influence their suitability to donate blood. Blood donors also have the right to withdraw at any stage of the donation process. Patients have a right to be protected from avoidable adverse effects of transfusion. Thus, while anyone may offer to become a blood donor, no one has the right to donate blood.[7,8]

NATIONAL GUIDELINES AND CRITERIA ON BLOOD DONOR SELECTION

National guidelines and criteria on blood donor selection should comply with national legislative and regulatory requirements and should be reviewed regularly and updated in response to changes in epidemiology, advances in technology, the latest medical and scientific information and new evidence. Emerging infections and other situations that may influence donor and patient safety should be monitored and may necessitate the revision and modification of donor selection criteria. Donor acceptance and deferral criteria and blood screening procedures have to be balanced to provide optimal safety for both donors and recipients while at the same time ensuring an adequate supply of blood and blood products.[9]

National health authorities should assess whether, and to what extent, any criteria for donor selection could be relaxed in order to maintain

adequate blood supplies in an emergency situation, such as pandemic influenza. However, any deviation from national guidelines and criteria on blood donor selection should be limited to a defined period in managing the emergency situation.[10]

In India, the BTS are guided by the donor deferral criteria laid down by the Transfusion medicine Technical manual (director General Health Services, Minister of Health and Family Welfare, Government of India.[11]

Donor questionnaire

A donor questionnaire is the key tool in donor selection for assessing donor health and safety and for reducing the risk of transmission of infection, in particular for infections for which no suitable screening tests are available. A standardized donor questionnaire incorporating selection criteria is now widely accepted as being necessary for uniformity and consistency in approach and for ease of implementation in assessing donor suitability. It ensures that the same information is collected systematically about each donor on each occasion of donation and forms the basis for a one-to-one confidential interview with a trained member of staff. The use of a donor questionnaire prompts donor selection staff to ask important questions and carefully assess the donor's health. By presenting all relevant information in a standard format, a donor questionnaire facilitates decisions on the acceptance or deferral of the donor.

A standard questionnaire that elicits a prospective donor's demographic, medical and risk history should be used throughout the country. The questionnaire should be simple, unambiguous, culturally acceptable, easy to complete and available in local languages where appropriate. Donor selection staff should be trained to recognize donors having difficulty in understanding any questions, for example, due to low literacy levels, and to explain the questions and facilitate the process for donors to provide accurate responses. The questionnaire should be reviewed at frequent intervals to ensure that it is effective and should be revised in accordance with changes in the selection criteria in the national guidelines.[12]

PUBLIC INFORMATION AND DONOR EDUCATION

Effective public information and donor education are the first steps in the process of donor selection. The dissemination of information on donor suitability through public awareness campaigns and donor information and education materials will help to ensure that individuals who volunteer as blood donors are well-informed and likely to be accepted. Informing potential donors about the health conditions and risk behaviour that would make them unsuitable as blood donors and the screening tests that are performed on donated blood enables prospective donors to assess their own suitability and provides an opportunity for them to self-defer.[13]

Towards 100% voluntary blood donation: a global framework for action[14] provides guidance on strategies to foster a culture of voluntary blood donation, including donor information and education, for building a safe, sustainable voluntary donor base.

Information materials on the donor selection process and criteria should be developed, including an explanation of their rationale and objectives. These materials should be simple and easy to understand, and written in languages suitable for the donor population.

INFRASTRUCTURE AND FACILITIES

It is essential that suitable infrastructure and facilities are made available in which blood donor selection can be performed in a friendly and conducive environment. Whether it is carried out in a fixed location or mobile setting, the venue for donor selection should provide adequate privacy and confidentiality.

A pleasant atmosphere for blood donation will encourage donors to relax and help to reduce anxiety. Space used for donor selection should be arranged to maximize the opportunities for confidential discussion between BTS staff and donors. Sufficient, suitable and well-maintained equipment for donor health assessment should be available. This may include equipment for haemoglobin screening, sphygmomanometers, weighing scales and essential consumables, such as disposable sterile lancets, disinfectants and stationery.

FINANCIAL AND HUMAN RESOURCES

A system of adequate and sustainable finances is imperative for a stable and sufficient supply of safe blood and blood products. The cost of public information programmes, donor education and donor selection is an important component of the BTS's operating costs. A dedicated budget should therefore be allocated for training of staff, the development of information, education and communication materials, and the supply of equipment and consumables required for assessing donor suitability.

Staff working in donor selection should have an understanding of the principles and basis for donor selection criteria and have the technical and clinical skills required to perform the health and risk assessment. The key skills, knowledge and competencies required for staff involved in donor selection include:

- Understanding of the donor selection criteria
- Pre-donation information and counselling
- Interview and assessment based on a standardized donor questionnaire
- Ability to explain questions in the donor questionnaire, ensure understanding and allay donors' apprehensions .
- Basic health check, including haemoglobin screening .
- Counselling of deferred donors.
- Post-donation advice and care.

QUALITY SYSTEM

The implementation of a quality system is a pre-requisite for a consistent approach to donor selection. Essential elements of a quality system in the donor selection process include:

- An organizational structure that defines the authority, responsibility and reporting channels of all personnel, including written job specifications
- Donor selection criteria, as part of the national guidelines for the BTS, to ensure uniform application in every facility in which blood donations are collected

- Standardoperatingprocedures(SOPs)thatguide everyprocess,procedure and task to ensure consistency, accuracy and donor adherence, including information on the necessary staff, facilities, forms, worksheets and references, such as:
- Donor interview and assessment based on a standardized donor questionnaire.
- Basic health check, including haemoglobin screening.
- Stafftrainingandcompetencyassessment,includingatrainingcurriculum and training records
- Records system (electronic or manual) that ensures traceability and confidentiality, including:
  - Donor records associated with each donation, including completed donor questionnaires
  - Results of basic health check and haemoglobin screening
  - Donor deferrals and reasons for deferral
  - Adverse donor reactions
- Periodic monitoring and evaluation of the donor selection process.

The confidentiality of donor records and the traceability of donations should be assured at all times through the use of unique identification numbers for donors and donations, and a mechanism linking donors to donations.

All instruments and equipment used in the donor selection process, such as weighing scales and devices for the measurement of body temperature, blood pressure and haemoglobin, should be maintained and calibrated in accordance with quality requirements. The health and safety of staff should be safeguarded, including protection from sharps injuries during haemoglobin screening.[15,16] Special attention should be given to the disposal of sharps, effluent copper sulphate and other waste materials.[17]

MONITORING AND EVALUATION

The process of donor selection requires on-going monitoring and evaluation to ensure that it achieves its objectives of ensuring donor and patient health and safety and a sufficient supply of safe blood and blood products. The main parameters to be monitored include:

- Donor demographics and characteristics
- Donor deferrals
- Donor adverse reactions
- Confidentiality, including facilities, procedures and documentation
- Complaints
- Blood screening results
- Transfusion reactions in recipients of blood and blood products
- Errors and untoward events
- Staff competency assessment and training needs.

Quantitative and qualitative data collection methods including focus group discussions could be considered to assess the effectiveness of blood donor selection.

Epidemiological monitoring of infection rates in blood donors, including age and gender-specific prevalence rates in new and repeat donors, contributes to a better understanding of donor behaviour and assessment of risk. Knowing and understanding confirmed infection rates in blood donors helps to ensure that donor selection, donor deferral and blood screening strategies are up-to-date and effective.

Post-donation counselling may reveal the probable exposure histories of infected donors and can help identify populations at risk of infection. This can provide information on the possible routes of infection and the effectiveness of the donor education and donor selection, including whether donor education materials give sufficient information about TTI risk and why the donor decided to donate. This kind of information aids in understanding patterns of infection in “asymptomatic” individuals and can be used to improve donor education, the donor selection criteria and donor selection process.

The following indicators may be used to monitor and evaluate the system of donor selection:

- Total number of individuals presenting to donate blood
- Number and percentage of deferrals from donation, by types of deferral: Permanent deferral, Temporary deferral and self deferral.

- Number and percentage of deferrals from donation, by reasons for deferral: Low haemoglobin, Other medical conditions ,High-risk behaviour, Travel and Other reasons
- Number and percentage of deferrals from donation, by age and gender of donors
- Percentage of donors who self-deferred following donor assessment and counselling
- Percentage of incomplete donor questionnaires
- Rate of adverse donor reactions, by types of reaction
- Prevalence of markers of transfusion-transmissible infection in screened donations: HIV, Hepatitis B (HBV), Hepatitis C (HCV),Syphilis, Others
- Number and percentage of confirmed positive donors, by age, gender and types of donor.

AIMS AND OBJECTIVES

To evaluate and analyze the blood donor deferral pattern and its causes among blood donors

REVIEW OF LITERATURE

Assessing donor suitability

The process should be planned to make best use of staff and donor time, and make blood donation as convenient as possible for blood donors, without long waiting periods.

Key principles of blood donor selection are as follows:

- The health and safety of the donor as well as the recipient must be safeguarded.
- Only individuals in good health should be accepted as donors of whole blood and blood components
- The selection of blood donors should be based on regularly reviewed selection criteria, without discrimination of any kind including gender, race, nationality or religion
- A prospective donor's health status and medical history should be evaluated for each donation, on the day of donation prior to blood collection
- The BTS should provide appropriate donor information and a simple donor questionnaire for health and risk assessment and obtain the donor's informed consent to blood donation
- Staff should be suitably qualified and trained in the donor selection process
- Good communication should be established between the BTS staff and the donor, and donor confidentiality should be assured
- The BTS has a duty of care to provide counselling to all deferred donors and referral for their further management

Donor Engagement

The key to safe blood transfusions is having safe and healthy donors. In order to ensure this, blood bank should follow these basic principles:

- Blood should be accepted only from voluntary, non-remunerated, low risk, safe and healthy donors. Replacement donors should be phased out.
- Efforts should be directed towards encouraging and retaining adequate numbers of healthy repeat donors.

- Donors should be appropriately recognized and thanked for their contribution

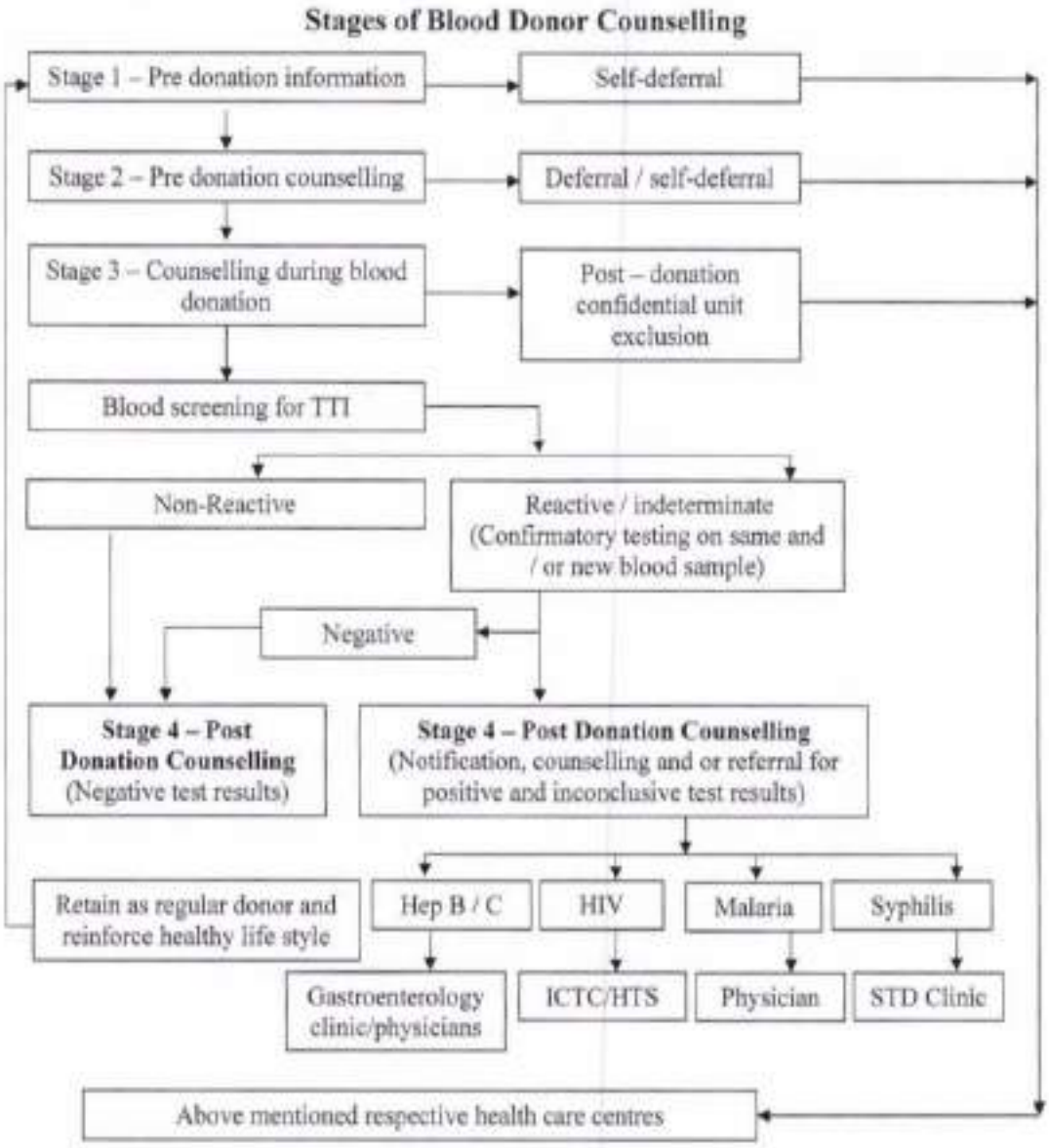
Donor motivation is usually done by volunteers from the community using various communication materials and methods to draw prospective donors to come to the blood bank or to a blood donation camp. The minimum criteria for blood donation are verbally screened at this stage, i.e., age between 18-65 years, weight at least 45 Kg and a Hemoglobin of at least 12.5 grams. This activity is a bit different from the counselling, which is offered once the prospective donor reaches the blood bank or blood donation camp with the intention to donate. Once recruited, all first time donors should be encouraged to become regular repeat donors and retained with the Blood Transfusion Service through constant engagement through different communication media. The role of community organizations, civil society bodies and NGOs plays a critical role in these activities.

Donor Selection and Counselling

Once a prospective donor reaches the blood bank or blood donation camp, the following steps should be followed:

1. Pre-donation information
2. Pre-donation counselling
3. Donor Questionnaire and Health check up
4. Counselling during blood donation
5. Post-donation counselling

Counselling is to be provided by trained blood donor counselors maintaining privacy and confidentiality. All blood banks may also train their donor organizers/paramedical staff/ medical officers to undertake counselling, in case a dedicated manpower is not available. Medical officer with minimum MBBS qualification should be responsible for reviewing the donor's health conditions and performing physical examination of the donor. Final call on donor selection is taken by the medical officer.


Stages of Blood Donor Counselling
Stage 1 – Pre donation information
Self-deferral
Stage 2 – Pre donation counselling
Deferral / self-deferral
Stage 3 – Counselling during blood donation
Post – donation confidential unit exclusion
Blood screening for TTI
Non-Reactive
Reactive / indeterminate (Confirmatory testing on same and / or new blood sample)
Negative
Stage 4 – Post Donation Counselling (Negative test results)
Stage 4 – Post Donation Counselling (Notification, counselling and or referral for positive and inconclusive test results)
Retain as regular donor and reinforce healthy life style
Hep B / C
HIV
Malaria
Syphilis
Gastroenterology clinic/physicians
ICTC/HTS
Physician
STD Clinic
Above mentioned respective health care centres

Pre-donation informationshould include information about:

- Nature and use of blood and its components and the importance of maintaining healthy lifestyles.
- Eligibility for blood donation.
- Rationale for the donor questionnaire and pre-donation health assessment
- Options for the donor to withdraw or self-defer at any time before, during or after donation.
- Blood donation process and potential adverse donor reactions.
- Common TTI, modes of transmission and window period
- Basic information on tests performed on donated blood

- Possible consequences for donors and donated blood in the case of abnormal TTI test results.

Donors should be educated regarding the possible risks of blood donation and possible risks of transmission of transfusion transmissible infections and encouraged to share his medical history and details to enable appropriate deferral. This is an opportunity to talk to, dispel doubts and answer questions from donors. It can be done as a one-on-group and integrated with the activities undertaken for donor recruitment and retention and supported with simple IC material and job aids like leaflets, posters etc.

Pre-donation Counseling should focus on the donor and preferably be done one-on-one.

The objectives include:

- Understanding of Donor Questionnaire to enable correct responses.
- Reiterate understanding of TTI testing and the disclosure of results.
- Clarify any misunderstanding about donor selection, blood donation and blood screening.
- Explain self-deferral.
- Explain temporary and permanent deferral.
- Familiarize donor to process of blood donation.
- Obtain donor's Informed consent.

Donor Questionnaire and Health Check-up is administered to every prospective donor to enable a quick history taking, limited physical examination and blood test. Questionnaire should be prepared in English and Local languages which is simple and easy to understand to be answered by the donor. For donors who are illiterate, assistance should be given by counsellor/ donor registration staff.

Demographic details of the donor, date and time of donor selection and donation should beregistered. Informed consent should be obtained in writing from the donors on the questionnaire. Prior to blood donation, the consent of the donor should be obtained in writing with donor's signature or thumb impression after the procedure is explained and the donor is informed regarding testing of blood for all mandatory tests for

safety of recipients. The donor should be provided an opportunity to ask questions and refuse consent. Efforts should also be made to obtain the correct contact details of the blood donors so that he can be contacted by the blood bank in future. Blood bank can ask to see a photo-identity but it should not be made mandatory to donate. Every prospective blood donor should be subjected to a basic health check up by a Medical Officer through history taking, limited physical examination and Hb test to determine eligibility to enroll as a blood donor. In case a donor is to be temporarily or permanently deferred, he should be explained the reasons in understandable terms.

Donor consent should be taken for the following understanding that:

1. Blood donation is a totally voluntary act and no inducement or remuneration has been offered.
2. Donation of blood/ components is a medical procedure and that by donating voluntarily, I accept the risk associated with this procedure.
3. My donated blood and plasma recovered from my donated blood may be sent for plasma fractionation for preparation of plasma derived medicines, which may be used for larger patient population and not just this blood bank.
4. My blood will be tested for Hepatitis B, Hepatitis C, Malarial parasite, HIV/AIDS and Syphilis diseases in addition to any other screening tests required to ensure blood safety.
5. I would like to be informed about any abnormal test results done on my donated blood. ***Yes/No***

Counselling during donation must be aimed at

- Ensuring that donors feel conformable during blood donation, including the venipuncture.
- Reducing donor anxiety and minimizing the risk of any adverse donor reactions such as fainting.
- Giving post donation advice, including care of the venipuncture site
- Fostering donor trust and confidence for donor retention
- Thanking the donor for his valuable contribution

Post-donation interaction includes:

- Brief instructions on self-care.
  - Plenty of fluids.
  - No heavy work.
  - No smoking or driving immediately post donation.
  - Remove bandage after 6 hours.
  - Contact details of blood bank in case of discomfort following donation.
- Information about what to do in case of specific adverse donor reactions.
- Message on healthy lifestyle and regular blood donation.
- Donor feedback.
- Issuance of donor card, donor certificate or a memento.
- Reiteration for recalling of blood donor for abnormal test results.

DONOR DEFERRAL

Donors who do not to meet the selection criteria should be deferred on a temporary or permanent basis. All deferred donors should be treated with respect and care in a confidential manner and should be given a clear explanation of the reason for deferral and an opportunity to ask questions. They should be informed whether the deferral is to safeguard their own health and/or that of the recipient. It is the responsibility of the BTS to ensure that donors who are deferred due to medical conditions are referred for further investigations and management, as appropriate.

Studies have found that deferral has a negative impact on future donor return, particularly by first-time donors and those deferred for more than a year.[18]

Temporarily deferred donors should be advised on when they could donate and encouraged to return. Donors are less likely to return to donate blood if unclear or unsatisfactory information is given about the reason for deferral. Many temporarily deferred donors do not spontaneously return to donate blood and may need to be recalled after the deferral period is over. Counselling of deferred blood donors

could enhance the compliance of donors to seek follow-up medical care.[19]

A system should be in place for donor counselling and referral if any further investigations, treatment and care are indicated.

DONOR RECORDS

The record of the donor's general health, medical history and TTI risk assessment as part of the donor questionnaire should always be signed by the donor as being correct. Records should be kept of each activity associated with blood donation, ideally in an electronic database capable of generating reports. Donor records should be confidential, easily retrievable and should allow traceability: from the donor to the patient receiving transfusion and vice versa. Records should be retained for a period of time defined by local or national legislation or guidelines. Donor records should be reviewed regularly and donor data (e.g. male: female ratio, donor deferrals, adverse donor events and reactions) should be analysed in order to monitor the effectiveness of donor selection so that remedial action can be taken, where necessary.

Key records, including dates, times and signatures, to be maintained and retained during the donor selection process include:

- Donor registration information
- Completed donor questionnaires and informed consent
- Outcomes of donor interview and assessment
- Donor deferral records
- Unique donation number for each donation
- Donor counselling and follow-up records
- Adverse donor events and reactions
- Donor deferral registry.

Data on donor deferrals should be collected and regularly reviewed to enable the BTS to assess the major causes of deferral, particularly those that result in the greatest numbers of donor deferrals and those presenting high risk to patients. Donor deferral records also enable the previous deferral status of donors to be checked and decisions made

on the re-entry of temporarily deferred donors. A donor deferral registry (DDR) is a confidential list of donors who are positive for a transfusion-transmissible infection and who have been permanently deferred. A DDR is used to monitor the incidence and prevalence of such infections in the donor population and may also assist in identifying areas that require strengthening in the donor selection process.

CONFIDENTIAL UNIT EXCLUSION (CUE)

The system of confidential unit exclusion (CUE) offers donors the opportunity to inform the BTS immediately after donation or subsequently if they consider that their blood may be unsafe for transfusion; this may be particularly useful if donors have been persuaded or coerced to donate.

ADVERSE DONOR REACTIONS AND POST-DONATION CARE

Nevertheless, there are recognized adverse reactions that can occur during blood donation; these can generally be minimized or avoided by appropriate donor selection and care, and appropriately trained staff.[20,21] Donors who have suffered an adverse reaction have been shown to be less likely to return to donate again. A system for the reporting and investigation of adverse donor events and reactions should be in place as part of the donor hemovigilance system.

General donor assessment

Certain parameters may be established from a brief medical history, observation and simple tests. Staff undertaking donor health and risk assessment should be well-trained in the observation of donor appearance and detection of signs of ill health. Donors should feel well on the day of donation and be able to perform their routine daily activities. Information about minor illnesses, exposure to communicable diseases, travel to disease endemic areas, pregnancy and lactation and medical and surgical interventions should be elicited so as to determine suitability for blood donation or the need for deferral.

AGE

Lower age limit

The lower age limit for blood donation in most countries is 18 years, although in some countries national legislation permits 16–17 year-olds

to donate.Studies of adverse events in blood donors have shown an increased rate of vasovagal reactions in younger donors.[22]; a study conducted in the United States of America in 2006 reported a 10.7% risk of a vasovagal reaction in donors aged 16–17 years, compared with 8.3% in 18–19 year-olds and 2.8% in donors aged 20 years or older.[23]

Upper age limit

Upper age limits for blood donation of between 60 and 70 years have been implemented in the past because of concerns regarding the increasing incidence of cardiovascular disease with age and the potential risk of adverse reactions, which are more likely in first-time donors.

- The usual upper age limit for blood donation is 65 years.
- First-time donors older than 60 years and regular donors over the age of 65 may be accepted at the discretion of the responsible physician
- First-time donors over 60 years should make their first donation at a donation site where a physician is available

DONOR APPEARANCE AND INSPECTION

The prospective donor should appear generally well,non febrile, breathless or suffering from a persistent cough. Donors should be observed to rule out malnutrition or any debilitating condition. They should have a sound mental status and not be under the influence of alcohol or drugs. The colour of exposed skin and mucous membranes should be normal, with no jaundice, cyanosis, flushing or pallor, and no signs of skin infection, rash or obviously enlarged lymph nodes. If body piercings or tattoos are present, the risk of transfusion-transmissible infections (TTI) should be assessed .The venepuncture site should be clean, free from any skin lesions or scars and the arms should be examined for signs of injecting drug use. Antecubital veins should be easily visible or palpable to enable proper venepuncture, thus avoiding any discomfort to the donor and minimizing the risk of major bruises or other soft tissue injury at the venepuncture site.

Donors with sight or hearing impairment may be accepted provided clear and confidential communication can be established. If assistance is required, it should be provided by a staff member or other independent person and not a family member or friend.

MINOR ILLNESSES

Minor non-specific symptoms (e.g. general malaise, pain, fever, headache, cough, diarrhoea) may indicate the presence of an acute infection that may be transmissible by transfusion.

Defer -Individuals with a history of recent infection: defer for 14 days following full recovery and cessation of any therapy, including antibiotics.[24]

WEIGHT

Low body weight and low blood volume have been shown to be independent predictors for vasovagal reactions.[25] It is generally accepted that the volume of whole blood donated should not exceed 13% of blood volume: e.g. a donor should weigh at least 45 kg to donate 350 ml (± 10%) or 50 kg to donate 450 ml ± 10%.[26,27] There are no defined upper weight limits for blood donation; however, gross obesity may be a reason for deferral if veins are inaccessible.

VITAL SIGNS

Pulse - A normal pulse rate of 60–100 per minute and a regular rhythm are indicators of good health

Body temperature - A prospective donor who is febrile – defined as a core oral temperature more than 37.6°C [28] – is by definition unwell and should be deferred. Fever can indicate any number of medical conditions and infections, but is usually associated with other symptoms

Blood pressure (BP) - A normal blood pressure (systolic 120–129 mmHg, diastolic 80–89 mmHg) is generally regarded as an indicator of good health.[29]

Haemoglobin screening

DONOR IRON STATUS

There are no rapid, simple and direct bedside methods for determining iron status. The pre-donation assessment of donor haemoglobin

remains the best approach. Normal ranges for haemoglobin and red cell indices differ between ethnic populations, and in males and females, and are also affected by age, especially in women.[30]International and national commonly recommend minimum haemoglobin levels of 12.5 g/dl for females and 13.5 g/dl for males but further studies are needed to justify the selection of these levels. Individuals with haemoglobin levels below the normal range are, by definition, anaemic.[31] There are many causes of anaemia and anaemia due to iron deficiency is the most prevalent. The aim of haemoglobin screening is to ensure that the prospective donor is not anaemic.

Haemoglobin screening safeguards anaemic individuals from donating blood and also protects returning donors from donation-induced iron deficiency (DIID), the depletion of iron stores by repeated donations.[32] Collecting a unit of blood from a donor with a normal haemoglobin level also provides good quality blood components, with adequate and consistent haemoglobin content in the collected blood.

Frequency of donation and iron supplementation

Iron deficiency is common worldwide and donation-induced iron deficiency is of particular concern in relation to women of childbearing age and adolescents A donation of 450 ml of blood removes 200–250 mg of haem iron. The average amount of stored iron (ferritin and haemosiderin) in a woman of reproductive age in the developed world is about 300 mg; hence, the donation of a unit of blood requires the subsequent mobilization of much or all of this reserve.[33]In developing countries, many women have depleted iron stores and will inevitably be precipitated into negative iron balance by blood donation .There is a high prevalence of iron depletion in frequent blood donors; increasing the inter-donation interval would reduce the prevalence of iron depletion and deferral due to low haemoglobin.[34,35] The standard approach for preventing donation-induced iron deficiency is universal screening and deferring those whose pre-donation haemoglobin is below a certain threshold. It is important to detect and manage the donation-induced iron depletion that inevitably accompanies regular

blood donation.[32] Reducing the frequency of blood donation is likely to reduce the prevalence of iron deficiency among blood donors, as might implementing routine iron supplementation.[35]

The minimum interval between donations of whole blood should be 12 weeks for males and 16 weeks for females

FLUID INTAKE AND FOOD - Before donation should avoid heavy or fatty meals which may result in a lipaemic donation that may need to be discarded. There is evidence that an intake of 500 ml of drinking water immediately before donation may reduce the risk of a vasovagal reaction.[36]

Pregnancy, lactation and menstruation -The average woman needs about 350–500 mg additional iron to maintain iron balance during pregnancy.[37]Menstruation is not a reason for deferral. However, women who report regular excessive menstrual bleeding and are found to have low haemoglobin levels should not donate blood and should be referred for medical assessment.

Accept - Female donors during menstruation, provided that they feel well and meet the minimum haemoglobin level for blood donation

Defer

- Female donors during pregnancy and up to 6 months after delivery or termination of pregnancy
- Female donors during lactation

OCCUPATION AND LEISURE ACTIVITIES

Delayed vasovagal reactions, defined as occurring after the donor leaves the blood donation site but within 24 hours of donation, are uncommon (reported as 46:100 000).[38] However, if the donor is in a hazardous situation, a delayed vasovagal reaction may put the donor and others at risk of harm. For this reason, most BTS advise donors in hazardous occupations (e.g. emergency services, working at heights) not to resume work for at least 24 hours after blood donation. Air crew are subject to their own regulations which do not permit blood donation within specified time limits.[39] Similarly, donors are generally advised not to undertake strenuous physical activities for up to 24 hours after blood donation.

Some occupations (e.g. health-care workers, police, military personnel, workers with animals) carry an increased risk of exposure to blood-borne infections, although confirmed transmission is relatively rare.[40] While such individuals should have been immunized against relevant diseases, where possible, donors in these occupations should be questioned about possible exposure risk (e.g. needlestick injuries, blood splashes, bites) and a deferral period, usually of 6–12 months applied, based on the incubation period of the relevant infection.

Sex workers are at particular risk of transfusion-transmissible infections and should not be accepted as blood donors

Donor medical history : Non-communicable diseases

HAEMATOLOGICAL DISORDERS

Anaemia, including haematinic (iron, B_{12} and folate) deficiency

The history of anaemia should be assessed in relation to its cause, current status and any treatment that has been received.

Accept - Individuals who:

- Have a past history of iron deficiency anaemia, with a known cause that is not a contraindication to donation, and who have completed treatment and are fully recovered
- Have a past history of B_{12} or folate deficiency, are fully recovered and are taking maintenance treatment with B_{12} or folic acid

Defer - Individuals who: Do not meet the minimum haemoglobin level for blood donation or are under investigation or on treatment for anaemia

Defer permanently - Individuals who have chronic anaemia of unknown cause or associated with systemic disease: e.g. renal failure, rheumatoid disease

Haemoglobinopathies

The sickle cell trait impairs the effective filtration of blood for leucodepletion.[41] Blood from donors with sickle cell trait is not suitable for intrauterine transfusion or neonatal exchange transfusion. It is also

unsuitable for patients with sickle cell disease [42]as it may exacerbate sickling of the red cells.

Accept - Individuals with: Thalassaemia traits and Sickle cell trait: provided they are well and meet the minimum haemoglobin level for whole blood donation

Defer permanently - Individuals with: Thalassaemia major or sickle cell disease.[43]

Enzymopathies and inherited red cell membrane defects

Glucose-6–phosphate dehydrogenase (G6PD) deficiency is the most common red cell enzyme defect .Blood from individuals with G6PD deficiency (with a history of haemolysis) is therefore unsuitable for transfusion as haemolysis may be precipitated if the recipient develops an infectious illness or ingests an oxidative drug or fava beans.[44]

Red cell membrane disorders include hereditary spherocytosis, hereditary elliptocytosis, hereditary ovalocytotic and hereditary stomatocytosis.[45]

Defer permanently -Individuals with G6PD deficiency or inherited red cell membrane defects, with a history of haemolysis

Thrombocytopenia -should not be accepted as blood donors because of the risk of bleeding at the venepuncture site and chronic thrombocytopenia may be associated with serious underlying haematological or other systemic disease.

Secondary erythrocytosis

Accept -Individuals with secondary erythrocytosis, provided that a diagnosis of polycythaemia rubra vera is excluded

Hereditary haemochromatosis

This inherited condition of iron overload through excessive iron absorption of dietary iron can be treated by phlebotomy; individuals who are otherwise healthy and meet all other donor selection criteria may be accepted as blood donors.[46]

Coagulation disorders, including haemophilia A and B

Accept -Individuals with *carrier states* for inherited coagulation disorders including haemophilia A or B, provided they have normal or near normal coagulation factor levels, do not have a history of

abnormal bleeding and have not received treatment with blood products

Defer permanently -Individuals with coagulation factor deficiencies, (inherited or acquired)

CARDIOVASCULAR DISEASES

Accept - Individuals with:

- Surgically corrected simple congenital cardiac malformations who have no residual symptoms
- Asymptomatic disorders such as functional murmurs and mitral valve prolapse

Defer permanently -Individuals with:

- Symptomatic ischaemic heart disease
- Symptomatic peripheral vascular disease, including history of arterial thrombosis
- History of myocardial infarction
- Severe cardiac arrhythmia
- Rheumatic fever with evidence of chronic heart disease
- Acquired valvular disease with stenosis or regurgitation
- Valve replacement
- Hypertrophic cardiomyopathy
- Palliated (i.e. uncorrected) congenital heart disease

Hypertension

Accept -Individuals with stable uncomplicated hypertension controlled by medication

Defer -Individuals who have recently started taking anti-hypertensive medication, or whose dose of anti-hypertensive medication has been adjusted: defer for 28 days after the blood pressure has been stabilized

Defer permanently -Individuals with hypertensive heart or renal disease

Venous thrombosis and thrombophlebitis

Unexplained venous thrombosis may indicate underlying malignancy or thrombophilia.

Accept -Individuals who have:

- Been identified as having a thrombophilic condition, but with no history of a thrombotic episode, and are not on anticoagulant treatment
- Had a single episode of deep vein thrombosis or pulmonary embolus with an identifiable cause, provided that they are fully recovered and anticoagulant therapy has been stopped for at least 7 days
- Had a single episode of thrombophlebitis in the last 12 months, provided they are otherwise well and off treatment for at least 7 days

Defer permanently -Individuals who have had:Two or more episodes of venous thrombosis requiring treatment

- Axillary vein thrombosis or thrombophlebitis affecting the upper limb,
- Two or more episodes of thrombophlebitis in the last 12 months

RESPIRATORY DISEASES

Accept -Individuals with asthma provided they are asymptomatic on a maintenance dose of non-steroid and/or inhaled steroid medication

Defer -Individuals with:

- Asthma during an acute exacerbation: defer for 14 days after full recovery
- Asthma on a course of oral or injected steroids: defer for 14 days following full recovery and cessation of oral or injected steroids
- Acute respiratory infections such as bronchitis: defer for 14 days following full recovery and cessation of any therapy, including antibiotics

Defer permanently -Individuals with:

- Respiratory disease if they are breathless at rest or on minimal exertion or are cyanosed.
- Severe obstructive airways disease, including those on long-term oral steroid therapy.
- Chronic or recurrent respiratory infections.

GASTROINTESTINAL DISEASES

Accept -Individuals with:

- Irritable bowel syndrome without debility
- Mild gastro-oesophageal reflux
- Mild hiatus hernia
- Treated coeliac disease
- Gallstones
- Cholecystitis, when fully recovered

Defer -Individuals with:

- Active peptic ulceration: defer until completion of treatment and full recovery
- Active inflammatory bowel disease (ulcerative colitis or Crohn's disease)

Defer permanently

- Individuals with malabsorption syndromes (except treated coeliac disease)

METABOLIC AND ENDOCRINE DISEASES

Diabetes mellitus

Accept -Individuals with diabetes mellitus well-controlled by diet or oral hypoglycaemic medication, provided they have no history of orthostatic hypotension and no evidence of infection, neuropathy or vascular disease, in particular peripheral ulceration

Defer permanently -Individuals with:

—Diabetes who require insulin[43]

— Complications of diabetes with multi-organ involvement

Thyroid disease

Accept -Individuals with benign thyroid disorders (provided they are euthyroid) such as: — Asymptomatic goitre, History of viral thyroiditis, Autoimmune hypothyroidism

Defer -Individuals: Under investigation for thyroid disease,hyper- or hypo-thyroid , history of malignant thyroid tumours

Defer permanently -Individuals with thyrotoxicosis due to Graves' disease

IMMUNOLOGICAL DISEASES

Accept -Individuals with:

- Mild, localized or inactive conditions, such as vitiligo or mild rheumatoid arthritis without systemic symptoms
- History of allergy, provided they are well and free from allergic symptoms on the day of donation
- Asthma ,Eczema

Defer permanently -Individuals with:

- Severe debilitating autoimmune disorders such as systemic lupus erythematosus, dermatomyositis or severe rheumatoid disease
- Immunosuppression due to congenital or acquired hypogammaglobulinaemia or immunosuppressive medication, with the exception of individuals with IgA deficiency
- History of anaphylaxis.[43]

RENAL AND URINARY TRACT DISEASES

Defer

- Individuals with lower urinary tract infections: defer for 14 days after full recovery and completion of treatment
- Individuals with acute self-limiting renal diseases such as acute nephritis when fully recovered and renal functions are normal; this may require deferral for 5 years after full recovery

Defer permanently - Individuals with chronic renal disease causing ill-health or anaemia, or associated with chronic or recurrent infection

CENTRAL NERVOUS SYSTEM DISEASES

History of transient cerebral ischaemic episodes or completed stroke-permanently deferred.

Epilepsy

Individuals with a history of epilepsy who have been off medication and seizure-free for a period of at least 3 years

MALIGNANT DISEASES

Accept -Individuals with a history of “in situ” malignant disease such as basal cell carcinoma or cervical carcinoma in situ, if regularly monitored and considered successfully treated and in good health

Defer

- current diagnosis of malignancy
- past history of solid malignant tumour if less than 5 years since completion of treatment.[47]

Defer permanently

- history of malignant melanoma
- current or past haematological malignancy, including:
    - Leukaemia, Lymphomas
    - Clonal haematological disorders such as: Polycythaemia rubra vera and essential thrombocythaemia, Paroxysmal nocturnal haemoglobinuria, Myelodysplastic syndromes

MUSCULOSKELETAL DISORDERS

Accept -acute or chronic simple musculoskeletal disorders, such as Backpain, Sciatica, Frozen shoulder, Osteoarthritis , provided these conditions do not inhibit their daily routine activities and they are able to climb on and off a donation couch without assistance

Defer -Individuals with fractures until plaster or external fixation is removed and they are fully mobile

Defer permanently -systemic diseases affecting joints, such as: Rheumatoid disease ,Psoriatic arthropathy, Ankylosing spondylitis .

SKIN DISEASES

Accept -Individuals with common skin conditions, such as:Mild eczema, Mild acne, Mild psoriasis,Individuals with burns, when fully healed .

Defer -Individuals with: Psoriasis with infected lesions, systemic symptoms, affected venepuncture site or receiving immunosuppressive or retinoid treatment

- Generalized skin disease(s) on systemic medication

- Contagious skin diseases such as scabies and ringworm until cleared; while not a blood safety risk, there is a potential risk to blood collection staff

Defer permanently - systemic diseases affecting the skin, such as: Scleroderma, Systemic lupus erythematosus, Dermatomyositis,Systemic cutaneous amyloidosis

PSYCHIATRIC DISORDERS

Accept - anxiety disorders or mood (affective) disorders (e.g. depression, bipolar disorder), provided they are generally in good health and are not obviously over-anxious, depressed or manic when seen on the day of donation, regardless of medication.[48]

Defer permanently - psychotic disorders requiring maintenance treatment

Donor medical history II: Medical and surgical interventions

HEPATITIS B

Accept - hepatitis B post-exposure prophylaxis with vaccine or immunoglobulin: accept 12 months after exposure if they have been tested negative for HBsAg and for anti-HBc*or,* if anti-HBc positive, must have anti-HBs greater than 100 mIU/ml

Defer - hepatitis B post-exposure prophylaxis with vaccine or immunoglobulin: defer for 12 months after exposure

RABIES

Defer - rabies post-exposure prophylaxis with vaccine or immunoglobulin: defer for 12 months after exposure

Live attenuated viral and bacterial vaccines

Live attenuated viral vaccines include hepatitis A, Japanese encephalitis, influenza, measles, mumps, rubella, polio (oral), smallpox and yellow fever. Bacterial vaccines include BCG, cholera and typhoid.

Defer -Individuals who have received live attenuated vaccines: defer for 28 days following vaccination

Inactivated vaccines

Non-live vaccines and toxoids include cholera, diphtheria toxoid, hepatitis B, human papillomavirus (HPV), influenza, meningococcal

meningitis, pertussis, pneumococcal, polio (injected), rabies, tetanus toxoid, tick-borne encephalitis and typhoid.

Accept -received non-live vaccines and toxoids (with the exception of HBV vaccine) with no history or known exposure and who feel well

Defer -with no known exposure to hepatitis B who have recently received routine vaccination: defer for 14 days

MEDICATIONS

Deferral criteria for medications taken by donors should take into account the underlying condition for which the medication is taken, the pharmacokinetic properties of the medication and the effect of the medication on the quality or safety of the donated blood.[49] A plasma concentration of the medication below 10% of the therapeutic level is highly unlikely to be harmful.

Accept -Individuals taking long-term low-dose antibiotics for acne

Defer -Individuals taking prescribed treatment with injected medications, including self-administration, based on the underlying condition for which the medication is taken

Individuals who have taken the following medications.[50]:

Aspirin: defer for 5 days,Other NSAIDs: defer for 48 hours ,Acitretin: defer for 3 years, Isotretinoin: defer for 28 days , Dutasteride: defer for 6 months ,Finasteride: defer for 28 days , Antibiotics for acute infections: defer for 14 days after completion of treatment

Defer permanently -Individuals treated with human pituitary-derived growth hormone because of case reports of transmission of iatrogenic Creutzfeldt-Jakob disease

BLOOD TRANSFUSION AND TRANSPLANTATION

Blood transfusion

Accept -Individuals whose sexual partners or close contacts have received blood transfusions

Defer

- Recipients of blood transfusion: defer for 12 months
- Former sexual contacts of individuals on regular treatment with plasma-derived coagulation factors: defer for 12 months after last sexual contact

- Current sexual contacts of individuals on regular treatment with plasma-derived coagulation factors

Defer permanently

- Recipients of blood transfusion or any other human-derived therapeutic products since 1980 in a country in which the risk of vCJD has been identified
- Individuals on regular treatment with plasma-derived coagulation factors.[48]

Organ, stem cell and tissue transplantation

Defer -Recipients of allogeneic tissues: defer for 12 months

Defer permanently -Recipients of:

- Stem cell or organ transplantation .
- Dura mater graft such as: Corneal transplant, Xenograft, Non-human organ perfusion.

DIAGNOSTIC AND SURGICAL PROCEDURES

Invasive investigations, particularly if associated with tissue biopsy, carry a risk of infection. Flexible endoscopes have been associated with the transmission of hepatitis C.[51] Dental procedures, although minor, are associated with transient bacteraemia.[52]

Defer - Individuals who have undergone:

- Minor diagnostic procedures including rigid endoscopy: defer until they have resumed normal activity
- Invasive diagnostic procedures using flexible endoscopy: defer for 12 months
- Minor surgical procedures: defer until treatment is complete and successful and they have resumed normal activity
- Major surgery: defer for 12 months
- Dental treatment: defer for 24 hours following simple procedures and up to 7 days following endodontic procedures (root canal therapy) or extraction

TRANSFUSION-TRANSMISSIBLE INFECTIONS

WHO recommends that, at a minimum, screening of all blood donations should be mandatory for the following infections and using the following markers[53]:

- HIV-1andHIV-2:screeningforeitheracombinationofHIVantigen-antibody or HIV antibodies
- Hepatitis B: screening for hepatitis B surface antigen (HBsAg)
- Hepatitis C: screening for either a combination of HCV antigen-antibody or HCV antibodies
- Syphilis (*Treponema pallidum pallidum*): screening for specific treponemal antibodies.

VIRAL INFECTIONS

Hepatitis

Prospective blood donors should be given relevant information on the risk of hepatitis transmission in order to provide them with the opportunity to self-defer.

Hepatitis B

Accept

The following individuals may be accepted for blood donation provided they have been tested and found to be negative for HBsAg, and for anti- HBc; if anti-HBc positive, they must have anti-HBs greater than 100 mIU/ml:

- Individuals with a past history of HBV if more than 12 months ago
- Current sexual contacts of individuals with a history of HBV infection if more than 12 months ago
- Current and former household contacts who have been successfully immunized against HBV and are anti-HBs positive

Defer

- Former sexual contacts of individuals with active HBV infection: defer for 12 months since last sexual contact
- Former household contacts of individuals with active HBV infection: defer for 6 months since last contact
- Health workers who have suffered an inoculation or mucosal injury: defer for 12 months following the exposure; health workers who have been vaccinated against HBV should be assessed individually

Hepatitis C

Accept -Household contacts of individuals with HCV infection

Defer

- Current sexual contacts of individuals with current or past HCV infection
- Former sexual contacts of individuals with HCV infection: defer for 12 months since last sexual contact
- Health workers who have suffered an inoculation or mucosal injury: defer for 12 months following the exposure

Defer permanently -Individuals with current or past HCV infection

Hepatitis A

Unlike hepatitis B and C, hepatitis A infection does not cause chronic liver disease and is rarely fatal, but it can cause debilitating symptoms and fulminant hepatitis (acute liver failure), which is associated with high mortality .

Hepatitis E

Hepatitis E virus (HEV) behaves in similar ways to HAV except that chronicity cannot be ruled out. Transfusion-transmission by blood and blood products has been reported

Defer –

- Individuals with active HAV, HEV or hepatitis of unknown origin: defer for 12 months after full recovery
- Sexual contacts, household and other close contacts of individuals with HAV, HEV or hepatitis of unknown origin: defer for 12 months since last contact

Human immunodeficiency virus/Acquired immunodeficiency syndrome (HIV/AIDS)

Infectivity estimates in case of transfusion of infected blood products are much higher (around 95%) than for other modes of HIV transmission owing to the much larger viral load per exposure than for other routes.

Accept -Household contacts of individuals with HIV infection

Defer

- Current sexual contacts of individuals with HIV infection

- Former sexual contacts of individuals with HIV infection: defer for 12 months since last sexual contact

Defer permanently -Individuals with present or past clinical or laboratory evidence of HIV infection

Herpes viruses

HHV8 is transmitted by sexual and non-sexual routes and has been reported to be also transmitted by transfusion and transplantation.[54]

Accept -Individuals with cold sores and genital herpes, provided there are no active lesions

Defer -Individuals or contacts who are symptomatic (except HHV8 infection): defer for at least 28 days following full recovery

Defer permanently -Individuals with HHV8 infection or Current and former sexual contacts of individuals with HHV8 infection.

Covid-19 infection-Individuals with positive Covid- 19 disease defer for 28 days

Mosquito-borne viruses

Dengue and chikungunya viruses

Dengue and chikungunya viruses are transfusion-transmissible mosquito-borne arboviruses. Both give rise to acute infections with no chronic infection, but re-infection with dengue virus can have very serious sequelae. Although both are potentially transmissible, there have been no proven cases of transfusion- transmission of chikungunya and relatively few reports of transmission of dengue.

ENDEMIC AREAS

Defer -Individuals with a history of dengue or chikungunya virus: defer for 6 months following full recovery from infection

NON-ENDEMIC AREAS

Defer -Individuals who:

- Have visited an area endemic for dengue or chikungunya: defer for 28 days following return
- Have suffered a febrile illness during or following return from an endemic region: defer for 6 months following full recovery from infection

“Childhood illnesses”: measles, rubella, mumps and chickenpox

Defer

- Individuals with measles, rubella, mumps or chickenpox: defer for 14 days after full recovery
- Individuals in close contact with patients having active measles, rubella, mumps or chickenpox and who are asymptomatic: defer for 21 days following last day of close contact

Influenza

Accept -Asymptomatic individuals with no close contact with those having active infection

Defer

- Asymptomatic household contacts and other close contacts of symptomatic individuals with active infection: defer for 7 days after last day of close contact
- Symptomatic individuals with active infection: defer for 14 days after full recovery and cessation of any therapy
- Individuals who have received vaccination against influenza: defer for 48 hours after vaccination; the deferral period should be extended as above if the donor is in a specific risk category.[55]

PROTOZOAL INFECTIONS

Malaria

ENDEMIC AREAS

Screen all donations for parasitaemia using thick blood films (smear microscopy) or for evidence of malarial antigen using a highly sensitive enzyme immunoassay

Defer -Individuals with a recent infection with malaria: defer for 6 months after completion of treatment and full recovery, whichever is longer

NON-ENDEMIC AREAS

If sensitive and multi-specific antibody screening tests are *not* available

Defer -Individuals who:

- Have travelled to malaria endemic areas and who have had no symptoms: defer for 12 months from last return from a malarious area
- Have travelled to malaria endemic areas and who have had febrile symptoms, but not diagnosed as malaria: defer for 12 months following full recovery or last return from a malarious area, whichever is the longer
- Lived in a malaria endemic area in the first 5 years of life or for a continuous period of 6 months or more: defer for 5 years after last return from a malarious area

Defer permanently -Individuals who have ever had a diagnosis of malaria

If sensitive and multi-specific antibody screening tests are available

Accept -Asymptomatic individuals with identified malaria exposure risk (travel and/ or residence): accept if more than 6 months after their last return from an endemic area

Defer -Individuals with: Identified malaria exposure risk (travel and/or residence), but *no symptoms*: defer for 6 months after last return from malarious area

- A current infection or history of malaria: defer for 3 years following completion of treatment and full recovery, whichever is the longer

Babesiosis

Defer permanently -Individuals who have ever had a diagnosis of babesiosis

BACTERIAL INFECTIONS

Bacterial contamination of blood components with organisms carried by the donor may be exogenous, due to skin contaminants entering the donated blood at the time of collection, or endogenous, due to bacteria present in the donor's blood.

Guidance on safe phlebotomy techniques can be found in WHO *Guidelines on drawing blood: best practices in phlebotomy*.[16]

Endogenous bacteria that are transfusion-transmissible include *Treponema pallidum, Borrelia burgdorferi*, *Brucella melitensis* and *Yersinia enterocolitica,* but blood donations are routinely screened only for *T. pallidum*.

Syphilis, yaws and gonorrhoea

Accept -Household contacts of individuals with syphilis

Defer-

- Current sexual contacts of individuals with syphilis
- Former sexual contacts of individuals with syphilis: defer for 12 months since last sexual contact
- Individuals with gonorrhoea: defer for 12 months following completion of treatment and assess for high-risk behaviour
- Current sexual contacts of individuals with gonorrhoea
- Former sexual contacts of individuals with gonorrhoea: defer for 12 months since last sexual contact

Defer permanently -Individuals who have ever had a diagnosis of syphilis

Salmonella, campylobacter, streptococcus and staphylococcus

Post-transfusion sepsis may result from donor bacteraemia associated with gastrointestinal, urinary or wound infections.

Defer- Individuals with:

- Symptoms suggestive of recent infection with salmonella, campylobacter or streptococcus: defer for 28 days following full recovery
- Other evidence of potential infection with staphylococcus: e.g. recent superficial but significant wounds: defer for 14 days following full wound healing

Tuberculosis

Defer -Individuals with tuberculosis: defer for 2 years following confirmation of cure

COUNTRY OF RESIDENCE AND TRAVEL HISTORY

Donor exposure to TTI is affected by their current and previous country (or region) of residence and their travel history. In areas that are non-endemic for specific infections, travel history is of particular importance

as prospective donors may be unaware of the geographical distribution of TTI such as malaria, Chagas disease, West Nile virus and vCJD. The deferral of prospective donors who have visited or been resident in disease-endemic areas should be balanced against the sufficiency of the blood supply.

HIGH-RISK BEHAVIOURS

High-risk sexual behaviours

Certain sexual behaviours have been shown by surveillance data to be associated with a high risk of transmission of HIV, HBV and HCV.[56] Deferral criteria should be simple and easily understood by staff and prospective donors and should ideally enable self-deferral, without the need for detailed intrusive questioning about an individual's sexual behaviour , they should be applied with sensitivity, a non-judgemental approach and assurance of confidentiality. High-risk sexual behaviours include having multiple sex partners, receiving or paying money or drugs for sex, including sex workers and their clients, men having sex with men (MSM) and females having sex with MSM.[56,57]

Defer -Current and Former sexual contacts of individuals whose sexual behaviour put them at high risk of transfusion-transmissible infections: defer until 12 months since last sexual contact

Defer permanently -Individuals whose sexual behaviour put them at high risk of transfusion- transmissible infections

Injecting drug use

Defer -Current or Former sexual contacts of injecting drug users: defer for 12 months since last sexual contact

Defer permanently -Individuals with a history of injecting drug use

Non-injected drugs and alcohol use

Accept -If no signs of intoxication

Defer -If displaying signs and symptoms of intoxication

Detention in prisons and penal institutions

Defer -Inmates of prisons and penal institutions

Cosmetic treatments and rituals

Defer -Individuals who have had acupuncture, piercing, tattoos, ritual scarification or any other invasive cosmetic procedures: defer for 12 months following the last procedure

A study done by Ahmad N et al[58] at Delhi , India over a period of 7 years (2012-2018) conducted a study to know the deferral rate and different causes of deferral in a newly established blood bank of a tertiary setup in south Delhi. A total of 7806 donors were registered (7503 Males, 303 Females) during the study period, out of which 988 (12.6%) donors were deferred. Amongst deferred donors, males (81.6%) outnumbered the females (18.31%). Overall deferral percentage was 12.6% which was more common in females (59.7%) as compared to males (10.7%). Most common cause of deferral in our study was Anaemia (43.2%) followed by Alcoholism (13%) and Hypertension (10%).

Jethani et al[59] conducted study named Analysis of predonation blood donor deferral characteristics in Ajmer (Rajasthan) region. A total of 26029, otherwise healthy, prospective blood donors were studied retrospectively over a period of 5 years. Results showed 1448 (5.56%) blood donors were deferred for various reasons. 1232 (4.89%) of total male donors and 216 (26.83%) of total female blood donors were deferred.1378 (95.16%) donors were deferred on temporary basis and only 70 (4.84 %) donors were permanently deferred. Anaemia (42.26%) was observed to be the most common cause of temporary donor deferral while hypertension with cardiac disorder (1.93%) was the most common cause of permanent deferral. All the temporary deferred donors (1378) were called after the period of deferment. Out of total 1378 temporarily deferred donors, only 129 donors returned later for voluntary donation.

Basavarajegowda et al[60] in his study namedWhole blood donor deferral causes in a tertiary care teaching hospital blood bank from South India.This was a 1year discretional study .Amongst 30711 donors who attended the blood bank for donation, deferral rate was 9.74%. Out of which there were 2487(83.11%) temporary and

505(16.89%) permanent deferrals. The most common cause for deferral was anaemia in females whereas among males it was alcohol consumption in the past 12hours.

Chenna et al[61] in her study on Implication of deferral pattern on the donor pool. This retrospective study of 4 years was conducted at a Tertiary Care Hospital, Karnataka, Southern India, to evaluate the various reasons for blood donor deferral from January 2011 to January 2014.A total of 54,653 subjects presented to our blood bank during this period out of which 2935 (5.6%) were deferred. The deferral to donor percentage was higher in females (36.54%) than males (3.64%). Low haemoglobin was the major deferral criterion seen in our participants (48.1%) followed by hypertension (16.4%), underweight (8.9%). Low pulse rate and fasting donor were the least prevalent reasons. A total of 36.8% of reasons for deferral were harmful to donors, 88.2% were non-pathogenic, and 98.1% were temporary causes.

Kumar, et al[62] conducted a study named Analysis of Predonation Deferral of Blood Donors in a Tertiary Care Hospital .The objective was to study and analyze various causes of deferral of blood donors and to categorize donors according to the type of deferrals, age, and gender. This was a retrospective analysis carried out at a tertiary hospital for 3 years.A total of 1522 (13.1%) out of 11,665 donors were rejected. Among them, 638 were men (41.9%) and 884 were women (58.1%) with a female-to-male ratio of 1.4:1. Majority donors belonged to the age group of 18–30 years (65.5%). The most common reason for temporary deferral was low haemoglobin (54.6%) while that of permanent deferral was hypertension (4.1%).

Valerian et al[63] in his study named Prevalence and causes of blood donor deferrals among clients presenting for blood donation in northern Tanzaniain 2016 . it was 1 year study.A total of 14377 participants were studied whereby 12775 (88.9%) were voluntary non- remunerated blood donors. The blood donor deferral rate was 12.7% and deferral was significantly more likely in females, with increasing age above 31 years, who came from nearby regions from where the blood bank is located and/or a family replacement donor *(P value <0.01)*. Overall,

infections contributed to 62% of all deferrals and low haemoglobin was the leading cause of temporary deferrals while Hepatitis B lead the permanent deferral causes.

Ekwere et al[64] in their study named Pattern of blood donor deferral in a tertiary hospital, South, Nigeria: A three-year study reviewfrom January 2009 to December 2012 was analyzed to determine the proportions and reasons for donor deferral in University of Uyo teaching Hospital blood bank.There were 5,636 donors of which 902 donors representing 16% of the entire donor population were deferred for various reasons. Large proportions (89.1%) of the donors were family replacement donors. Female donors constitute 16% of the entire donor population and were more frequently deferred than male donors 34.4% versus 12.4%, respectively. Transfusion transmissible infections (TTIs) positivity and anaemia were the major reasons for permanent (50.4%) and temporary (39%) deferral of donors. the TTIs rates were higher among male donors than female donors. conversely, more female donors were anaemic (25.6%) compared to male (12.7%). Other reasons identified for donor deferral were underage (6.8%), underweight (2.4%), and hypertension (3.1%). conclusion: A donor deferral rate of 16% in this study is similar to that reported in other studies. However, the reasons for deferral differ reflecting differences in donor selection criteria.

Chauhan C et al[65] conducted a study in 2017 at Moradabad, Indiatoanalyze various reasons for blood donor deferral and to study its long term impact on potential prospective blood donors.1448 (5.56%) blood donors were deferred for various reasons. 1232 (4.89%) of total male donors and 216 (26.83%) of total female blood donors were deferred.1378 (95.16%) donors were deferred on temporary basis and only 70 (4.84 %) donors were permanently deferred. Anemia (42.26%) was observed to be the most common cause of temporary donor deferral while hypertension with cardiac disorder (1.93%) was the most common cause of permanent deferral. All the temporary deferred donors (1378) were called after the period of deferment. Out of total

1378 temporarily deferred donors, only 129 donors returned later for voluntary donation.

MATERIALS AND METHODS

Data was analyzed prospectively for whole blood donations over a period of 1 year, from January to December 2020.

Donors presenting at indoor as well as outdoor blood donation locations was included in the study.

Source of Data

Data for whole blood donors presenting for donation in blood collection centre and outdoor camps over one year was analyzed.

National guidelines used for selection and deferral of whole blood donors.

METHOD OF COLLECTION OF DATA

Donor counselling and screening through questionnaire before donation is an important process to ensure blood safety. All blood donors were screened as per guide lines of the National AIDS Control Organisation (NACO) provided in Standards for Blood Banks and Blood Transfusion Services under the Drugs and Cosmetic Act 1940. The deferred donors are informed about the reason of deferral and counselled accordingly. The potential blood donors presenting themselves at the Department of Immunohematology and blood transfusion in our hospital or the outdoor camps, deferred due to temporary or permanent donor deferral criteria as per Blood Donor Questionnaire will be included in the study analysis. For collection of whole blood initially, the donor selection standard operating procedure was followed.

INCLUSION CRITERIA

Study included both voluntary as well as Replacement/ Related donors and they were screened in accordance with the National guidelines.

Donors with age between 18-65 years, weight of more than 50kg, Haemoglobin > 12.5g, Pulse between 60-100, Systolic Blood Pressure between 100-180mmHg, Diastolic Blood Pressure between 60-100mmHg, no alcohol in the prior 72hrs and approved by screening questionnaire according to national guidelines. Donor haemoglobin

(Hb) was checked using the HemoCue Hb201^{+} (HemoCue AB, Angelholm, Sweden). The cut-off point for Hb was 12.5g/dl.

Voluntary - A person who donates blood (and plasma or cellular components) of his/her own free will and receives no payment for it, either in the form of cash, or in kind which could be considered a substitute for money .

Replacement / Related Donors - A person who gives a replacement unit of blood only when a family member or friend requires transfusion.

EXCLUSION CRITERIA-

Autologous -A patient who donates his/her blood to be stored and reinfused, if needed, during surgery

Directed -A donation that is given specifically for transfusion to a named patient

Apheresis Donors-Any procedure in which blood is withdrawn from a donor, a portion (such as plasma, leukocytes, or platelets) is separated and retained, and the remainder is re-transfused into the donor

DURATION OF STUDY

1 Year (Jan 2020 up to Dec 2020)

OUTCOME

It is important to determine the rate and causes of whole blood donors' deferral to guide the recruitment and retention efforts at local, regional and national level.

STATISTICAL ANALYSIS

Data was described in terms of range; mean ±standard deviation (± SD), frequencies (number of cases) and relative frequencies (percentages) as appropriate. All statistical calculations were done using SPSS (Statistical Package for the Social Science) SPSS 21 version statistical program for Microsoft Windows.

OBSERVATIONS AND RESULTS

- A total number of 22652 potential blood donors were registered for blood donation inboth indoor and outdoor collection. Out of which, 97.71% (n= 22134) were accepted for blood donation and 2.3% (n=518) were deferred for various reasons as shown in figure 1.

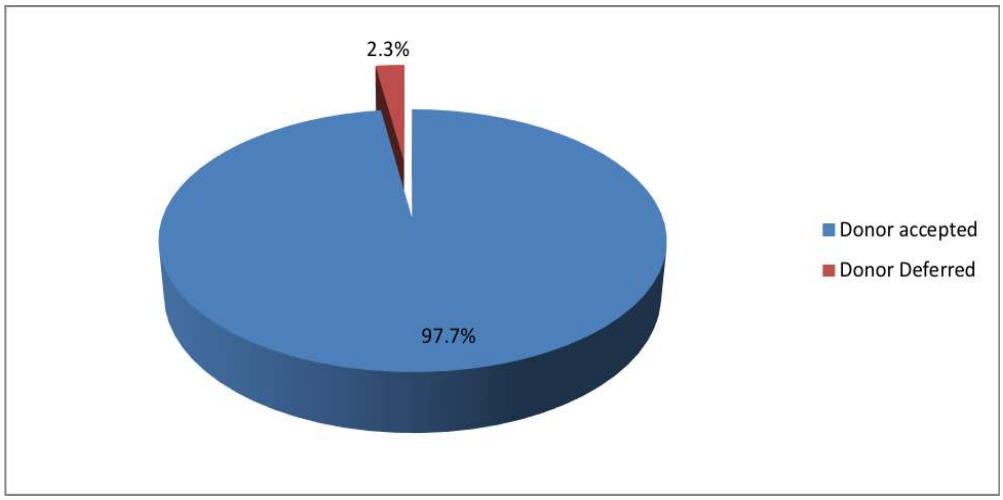


Figure 1. showing Total deferral rate among donors.

Total number of indoor collection was 19504 whereas outdoor collection was 2630. Among 518 deferred donors, 62.9% (n=326)donors deferred were from indoor collection and 37.1% (n=192) were of outdoor collection as shown in figure 2.

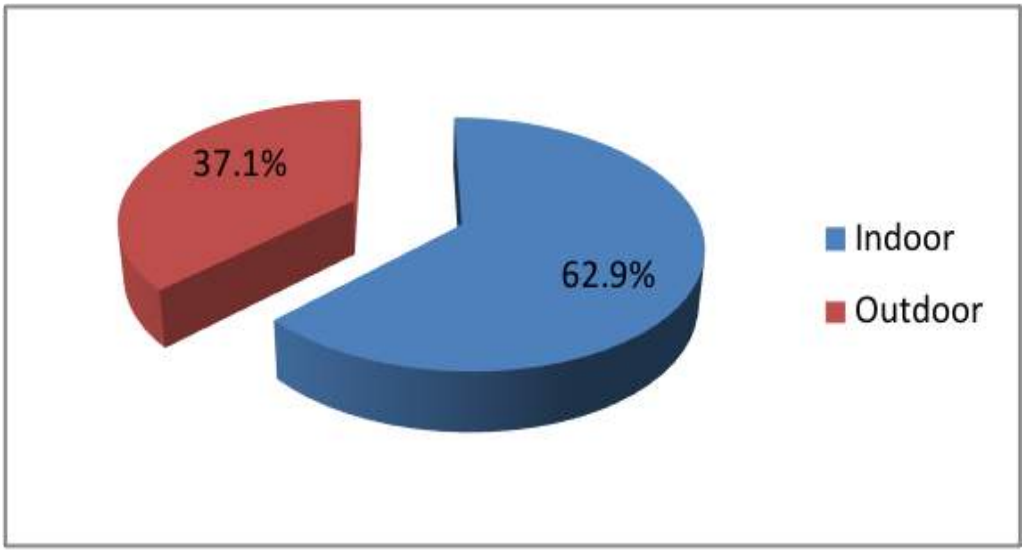


Figure 2. showing donors deferred rate among indoor and outdoor donors.

Among the 518 donors deferred, 73.7% (n=382) were males and 26.3% (n=136) were females as shown in figure 3.

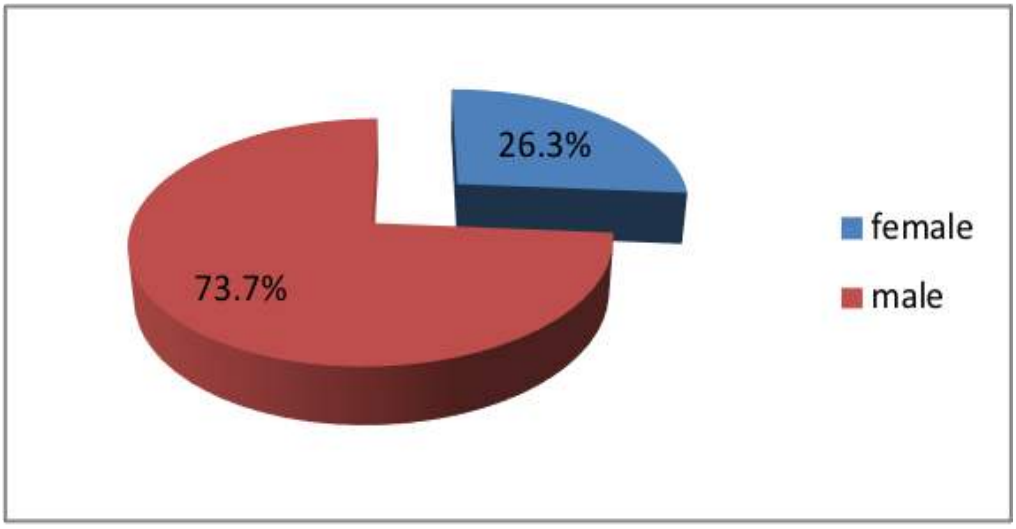


Figure 3. showing the deferral rate among males and female donors.

- A total number of 70.3% (n=364) donors deferred were voluntary donors from total of 18,105 voluntary donors and 29.7% (n=154)deferred were replacement donors from total of 4547 deferred donors as shown in figure 4.

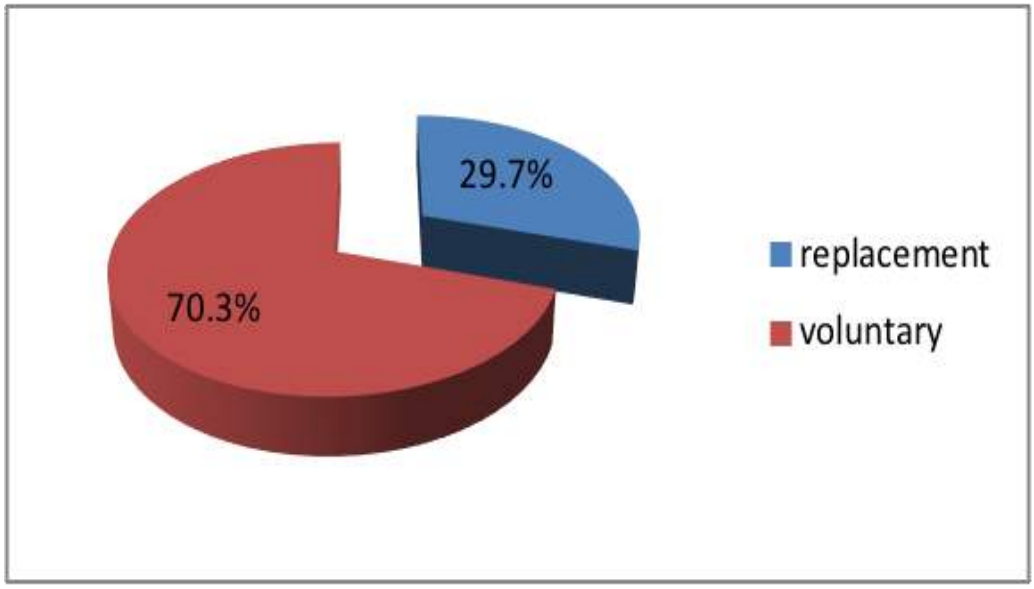


Figure 4. showing deferral rate among voluntary and replacement donors.

- Deferred donors were classified into Self deferral, Temporary and Permanent. Majority of donor deferral, 77.4% (n=401) were on temporary basis and, 17.2% (n=89) were permanently deferred and self-deferral were 5.4% (n=28) as shown in figure 5 below.

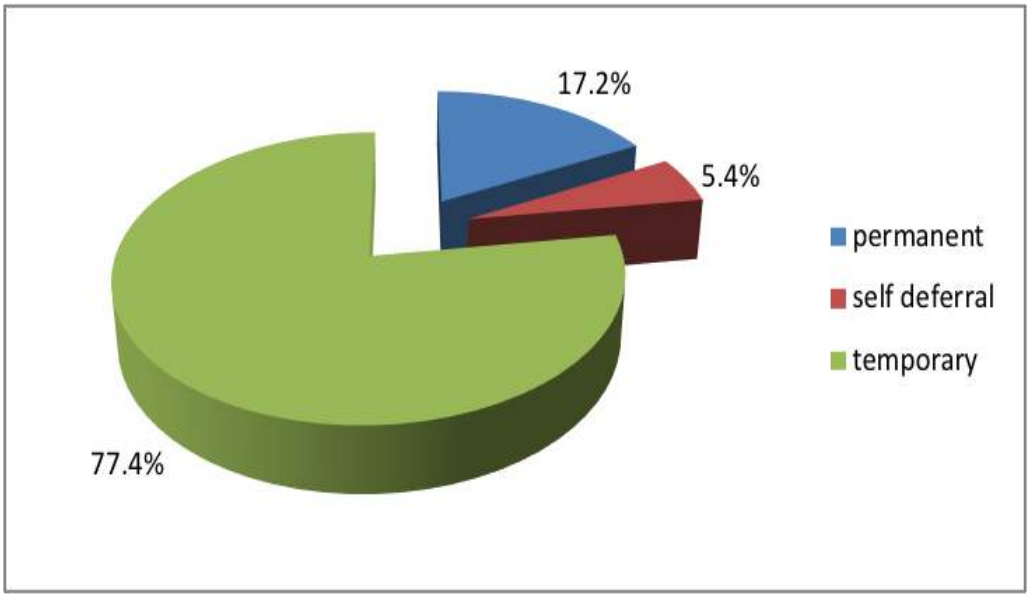


Figure 5. showing deferral rate on basis of type of donation.

Among the donors, who came to donate blood,5 donors were under age, and 1 donor was overage, as per the WHO regulation and the criteria, they did not qualify to donate blood. Maximum donors deferred were among the age group 18-30 years (50.8%), next common age group being deferred was 31-40 years (27.2%) followed by the 41-50 years age group with 14.9% donors as depicted in table 1 and figure 6 below.

Table 1. showing donor deferral rate on the basis of age group

Age	No. of cases	Percentage
< 18	5	1.0%
18-30	263	50.8%
31-40	141	27.2%
41-50	77	14.9%
51-60	30	5.8%
61-65	1	0.2%
> 65	1	0.2%
Total	518	100.0%

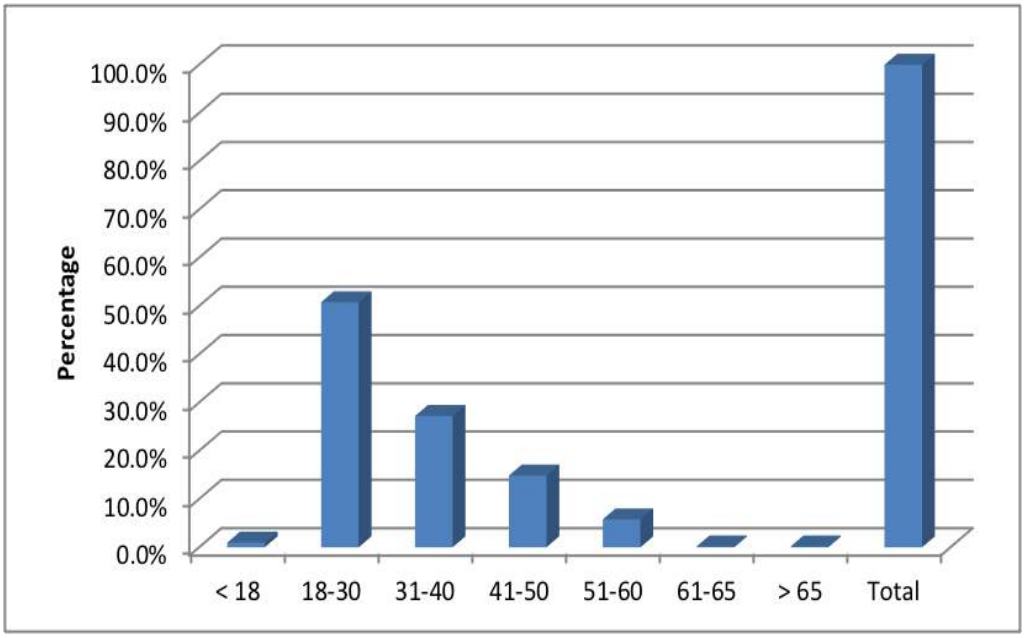


Figure 6. showing donor deferral rate on the basis of age group

- Out of 518 deferred donors, 51% (n=264)were 1st time donors while 49% (n=254) donors were repeat or regular donors as shown in figure 7 below.

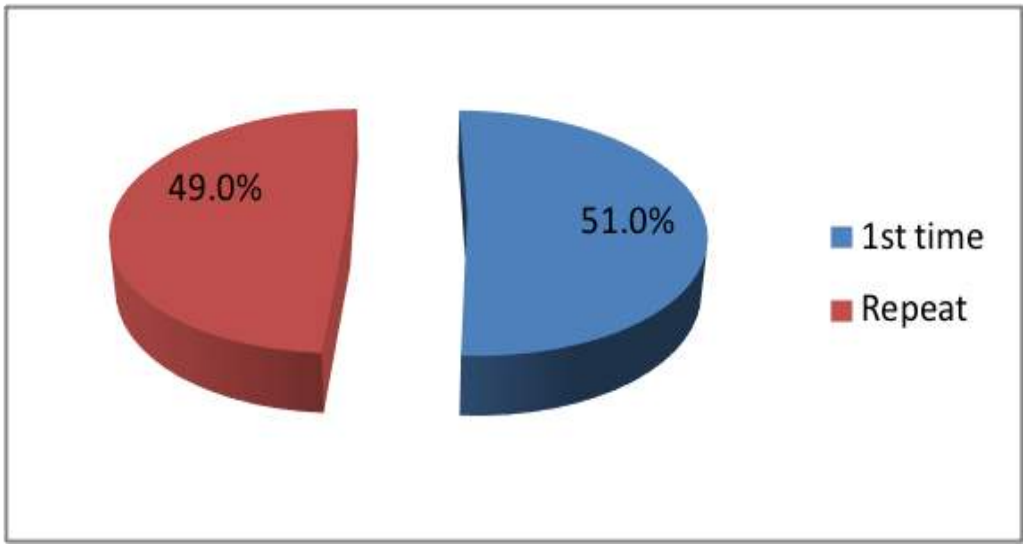


Figure 7. showing donor deferral rate among repeat / regular and first time donors.

- While evaluating marital status of deferred donors, 55.2% (n=286) were married and 44.8% (n=232) were unmarried as depicted in figure 8 below.

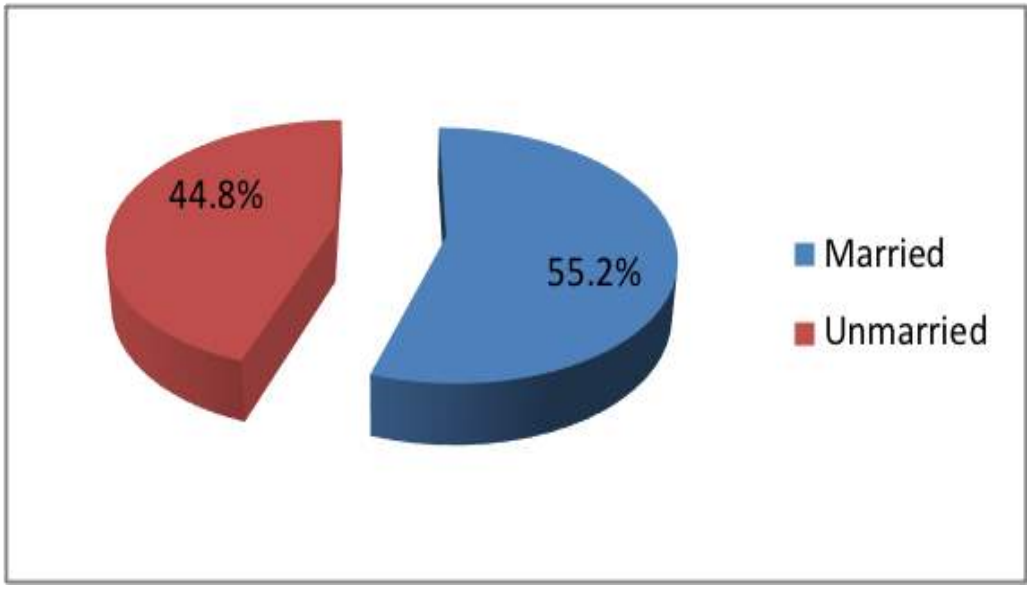


Figure 8. showing donor deferral rate on basis of marital status.

- Deferred donors were evaluated on basis of geographical area also. From 518 deferred donors,(n=323) 62.4% donors deferred were from urban area while 37.6% (n=195) were from rural area as shown in figure 9 below.

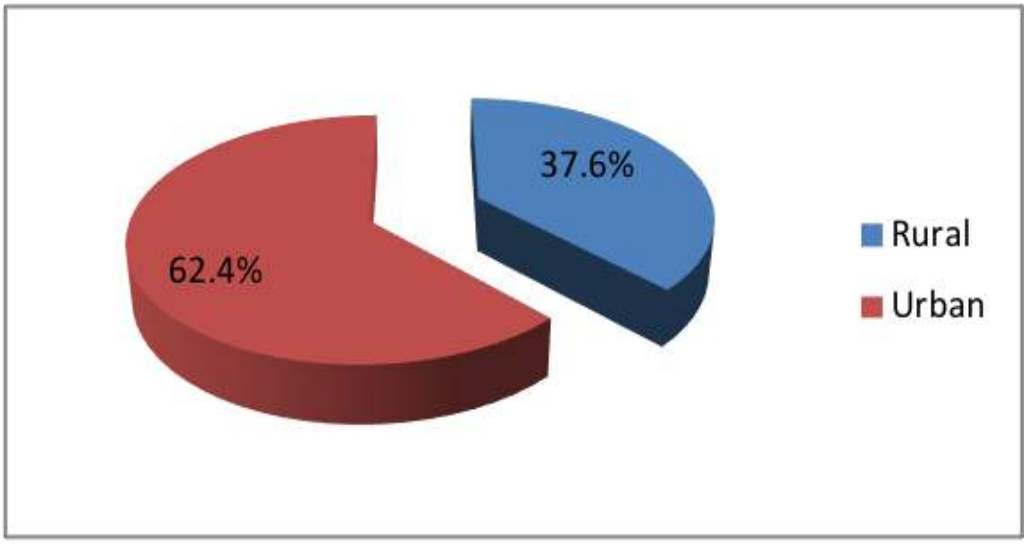


Figure 9 showing donor deferral rate on basis of geographical area.

As our blood centre is located in Ludhiana, Punjab. Therefore maximumdonors deferred were from our region that were 95.9% (n=497)as shown in table no. 2 and figure 10 below.

Table 2. showing donor deferral rate among different states.

State	No. of cases	Percentage
Haryana	4	0.8%
Himachal Pradesh	2	0.4%
Jammu and Kashmir	13	2.5%
New Delhi	1	0.2%
Punjab	497	95.9%
West Bengal	1	0.2%
Total	518	100.0%

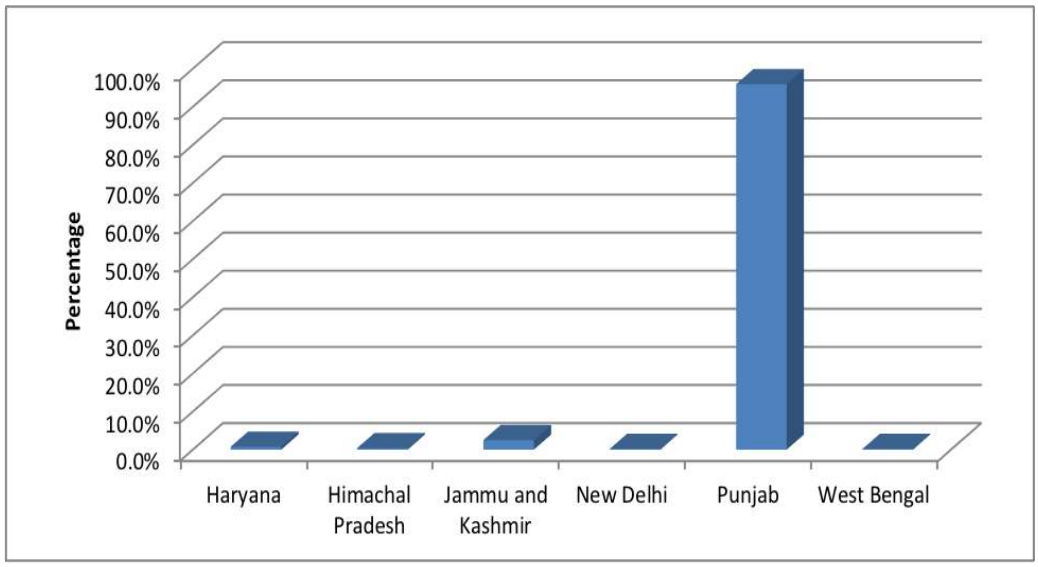


Figure 10. showing donor deferral rate among different states.

- Upon evaluating on the basis of education,62.2%(n= 322) deferred donors were of graduated /post graduated category, 23.6% (n=122) were of diploma/post high school category and 8.5% (n= 44) deferred donors were high school passed as depicted below in table 3 and figure 11.

Table 3 showing donor deferral rate on basis of education.

Education	No. of cases	Percentage
Graduate / Post Graduate	322	62.2%
Diploma/Post high school/ Intermediate	122	23.6%
High school	44	8.5%
Middle school	16	3.1%
Primary school	12	2.3%
Illiterate	2	0.4%
Total	518	100.0%

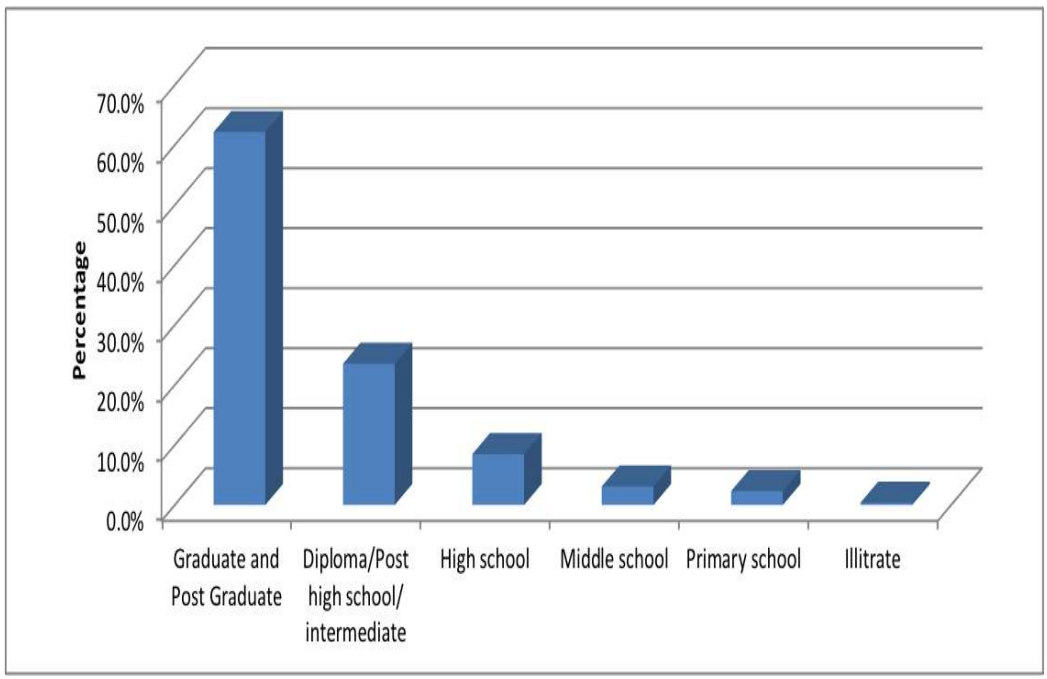


Figure 11. showing donor deferral rate on basis of education.

- Depending upon the occupation, maximum donors deferred were usuallyofbusiness class 23.6%(n=122),students 23.2% (n=120) and service class 22% (n=114) as depicted in table 4 and figure 12 below.

Table 4 showing donor deferral rate on basis of occupation.

Occupation	No. of cases	Percentage
farmer	51	9.8%
student	120	23.2%
housewife	48	9.3%
Business	122	23.6%
service	114	22.0%
driver	11	2.1%
labourer	33	6.4%
Social Elite	18	3.5%
social worker	1	0.2%
Total	518	100.0%

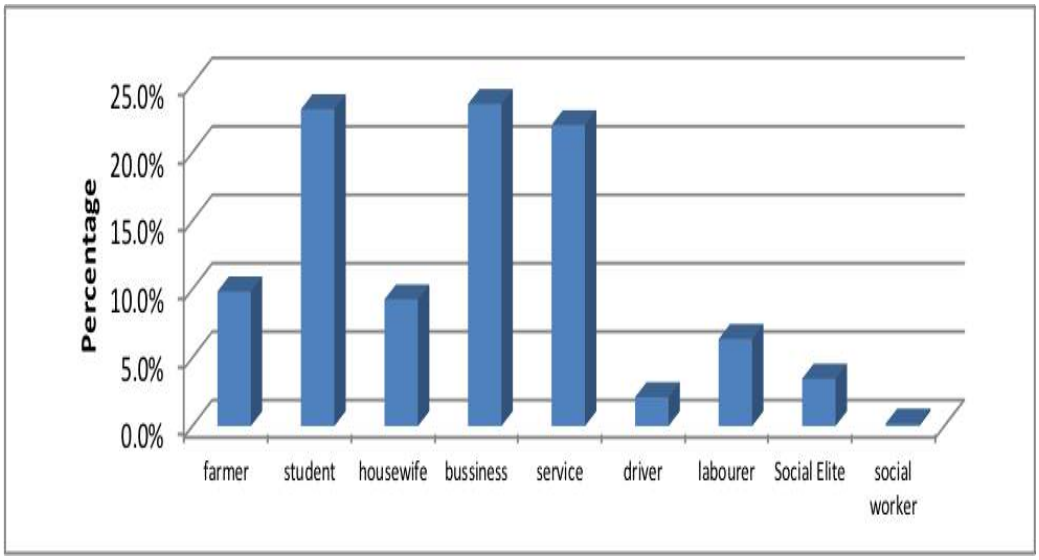


Figure 12. showing donor deferral rate on basis of occupation.

On basis of caste, deferral rate was higher among Jattcaste community that is33% (n=171) than other communities as shown in table 5 and figure 13.

Table 5 showing donor deferral rate on basis of different castes

Caste	No. of cases	Percentage
Jatt	171	33.0%
Jain	14	2.7%
Arora	27	5.2%
Baniya	44	8.5%
Brahmin	46	8.9%
Khatri	37	7.1%
Rajput	21	4.1%
Kumhar	7	1.4%
Lohar	5	1.0%
Chang	7	1.4%
Nai	6	1.2%
Soi	8	1.5%
Gujjar	6	1.2%
Ramdasia	19	3.7%
Ravidasia	16	3.1%
Chamar	18	3.5%
Mazhabi	19	3.7%
Ad dharmi	19	3.7%
Balmiki	11	2.1%
Ramgarhia	3	0.6%
Dhobi	3	0.6%
Teli	3	0.6%
Sunni	5	1.0%
Shia	3	0.6%
Total	518	100.0%

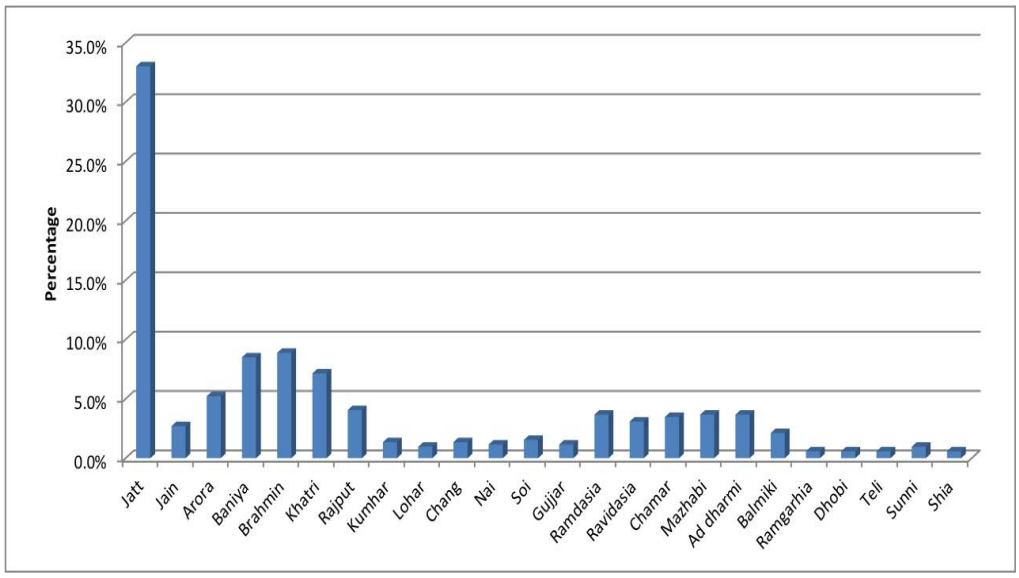


Figure 13 showing donor deferral rate on basis of different castes

- While evaluating month wise deferral rate of donors, deferral rate was less from month of April to October as depicted in table 6 and figure 14 because number of donations were also less due to Covid-19 pandemic.

Table 6 showing donor deferral rate according to month wise.

Month	No. of cases	Percentage
January	41	7.9%
February	111	21.4%
March	77	14.9%
April	28	5.4%
May	23	4.4%
June	29	5.6%
July	25	4.8%
August	20	3.9%
September	24	4.6%
October	30	5.8%
November	65	12.5%
December	45	8.7%
Total	518	100.0%

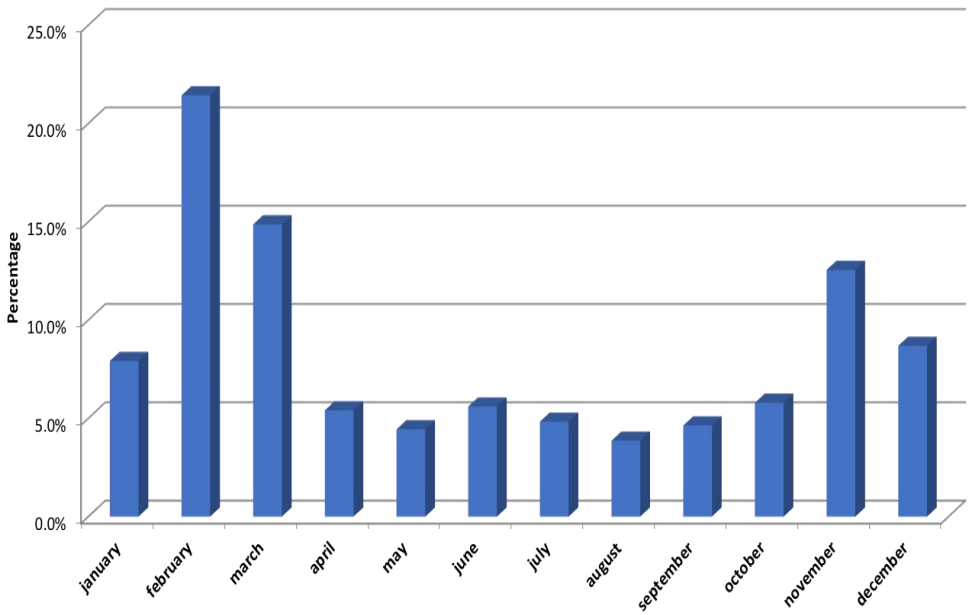


Figure 14 showing donor deferral rate according to month wise.

- Main categories of donor deferral are listed below in table 7
- Maximum donor deferral rate was due to medicalconditions that come under category no. 4 were49.6% (n= 257),2nd commonest cause of donor deferral was low haemoglobin 20.1% (n=104) as shown in table 7 and figure 15.

Table 7. enlisting different categories of donor deferral.

Category	**causes**	No. of cases	Percentage
1	Low haemoglobin	104	20.1%
2	Low weight	16	3.1%
3	Physiological status of women	15	2.9%
4	Medical causes	257	49.6%
5	Surgical causes	36	6.9%
6	High risk behaviour	42	8.1%
7	Other causes	58	11.2%
8	Post covid-19	9	1.7%

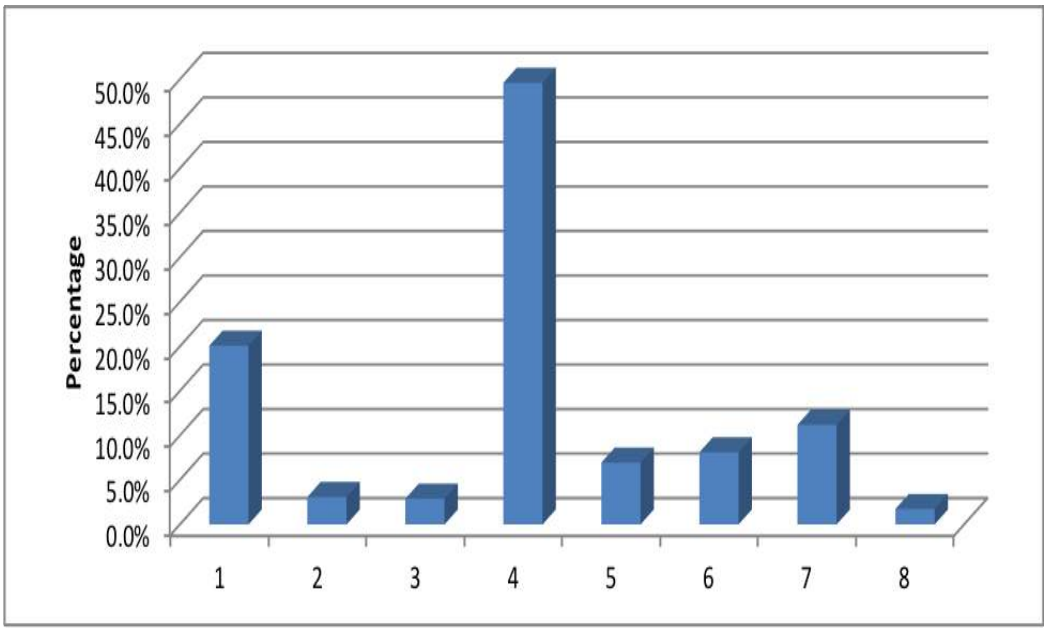


Figure 15 showing different categories of donor deferral

- Main medical causes of donor deferral were medications (n= 84), skin diseases (n=46) and other infectious diseases (n= 43).
- In Skin diseases, main deferral causes are Allergic skin diseases (n=26), Fungal skin diseases (n= 11), other diseases are Scabies, Acne vulgaris, Psoriasis, Vitiligo.
- Other Infectious diseases include Dengue, Typhoid, Conjunctivitis, Chickenpox, Malaria, Fever. As shown in table 8 below.

Table 8. showing medical conditions causing donor deferral

Medical causes	**Temporary**	**Permanent**	**Total**
Respiratory	24	7	31
Skin diseases	45	1	46
Gastro-intestinal	9	0	9
CNS/Psychiatry	14	13	27
CVS	1	23	24
Endocrine	0	28	28
Hepatic	3	0	3
Autoimmune	0	6	6
Malignancy	0	5	5
Other infectious diseases	43	0	43
Vaccination	4	0	4
Any Medication	84	0	84
Dog bite/Anti-Rabies	9	0	9

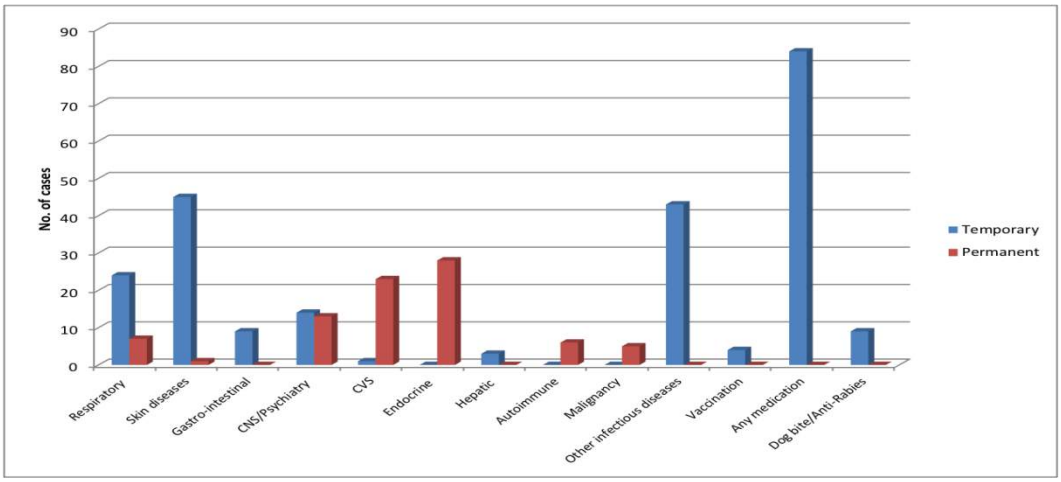


Figure 16 showing medical conditions causing donor deferral.

Donor deferred due to medication history were 16.2% (n=84) as depicted in table 9 and figure 17 below.

Table 9 showing donor deferral on the basis of history of medication intake.

Medication	No. of cases	Percentage
No	434	83.8%
Yes	84	16.2%
Total	518	100.0%

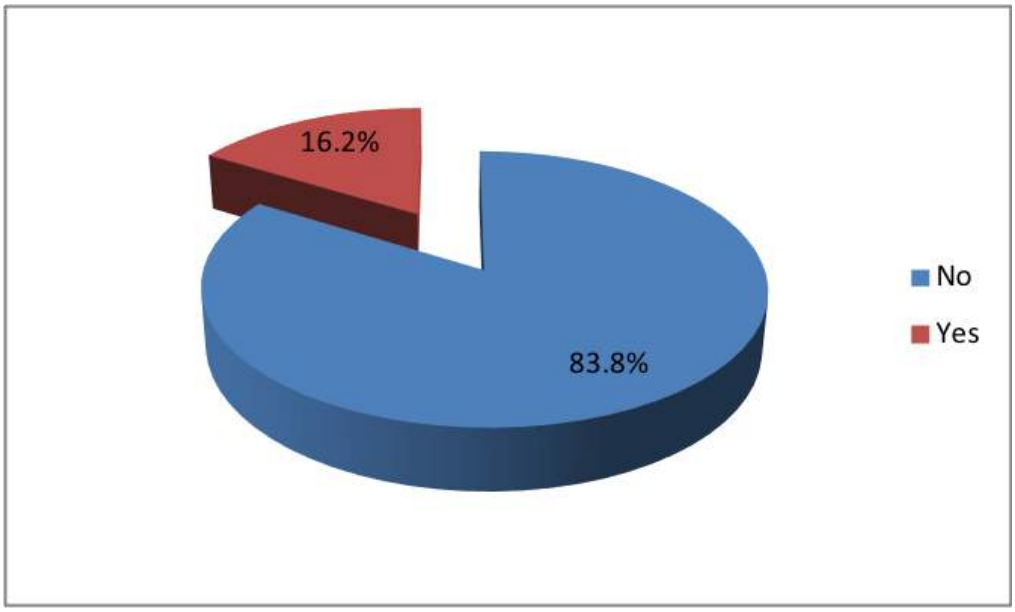


Figure17. showing donor deferral on the basis of history of medication intake.

- Donors deferred due to surgicalconditions were includedin category number 5 that were 6.9% (n= 36) as shown in table 10 and figure 18.

Table 10 showing surgical conditions causing donor deferral.

Surgical causes	Temporary	Permanent	Total
Major Surgery	24	1	25
Minor Surgery	2	0	2
Dental Procedure	4	0	4
RSA	4	0	4

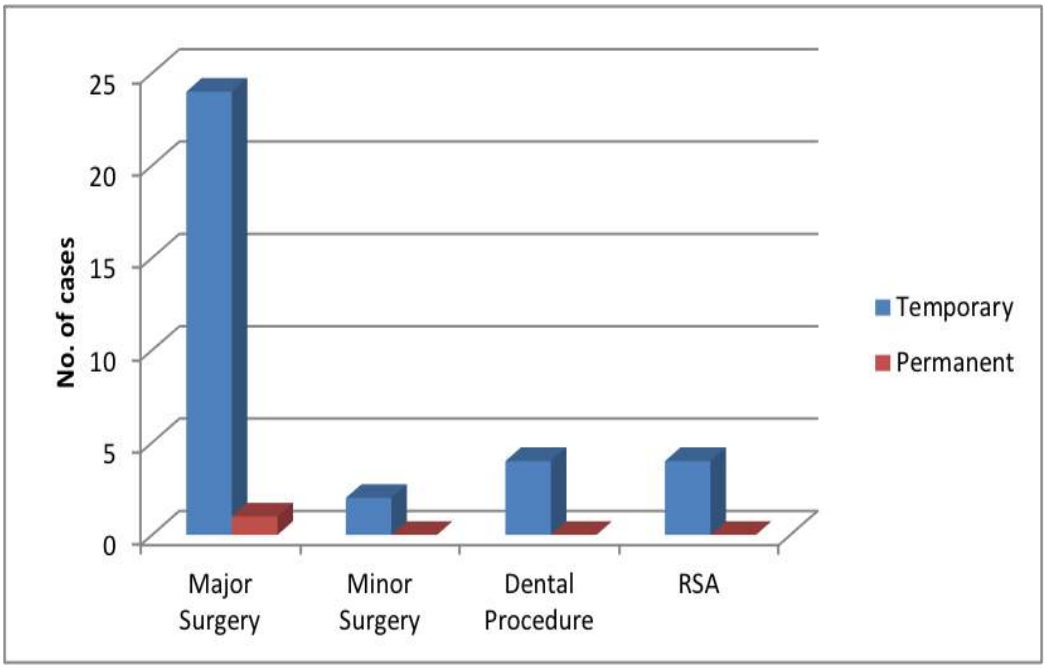


Figure 18 showing surgical conditions causing donor deferral.

Category number 3 includedthe Physiological status of women, donor deferral rate was 2.9% (n=15) shown in table 11 and figure 19 below.

Table 11 showing donor deferral on the basis of physiological status of women

Physiological status of women	No. of cases	Percentage
Menstruation	9	1.7%
Abortion	3	0.6%
Breast feeding	1	0.2%
Pregnancy	1	0.2%
Recently delivered	1	0.2%

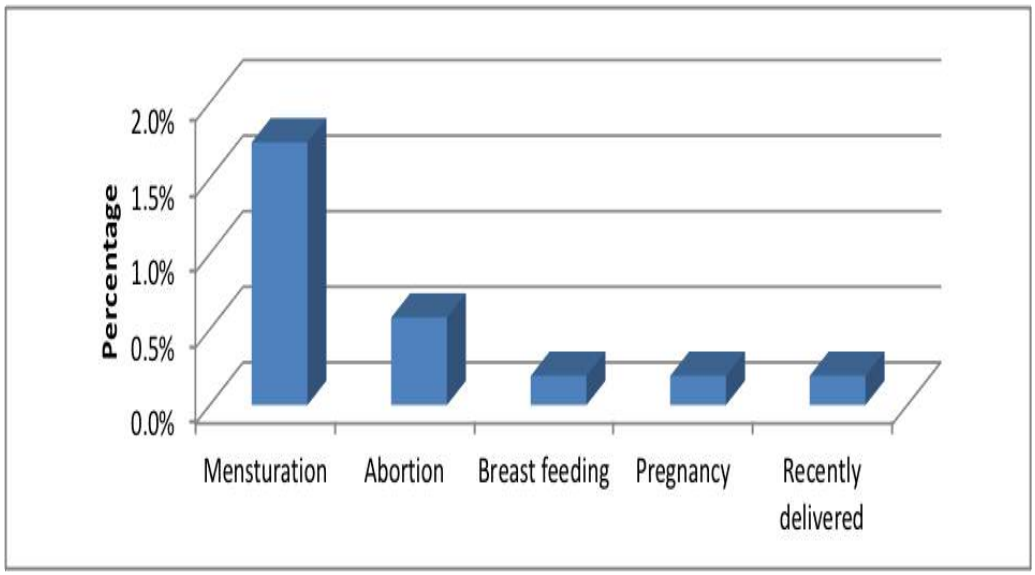


Figure 19. showing donor deferral on the basis of physiological status of women.

Category number 6 include high risk behaviour among donors ,had deferral rate of 8.1% (n =42). Tattooing was most commonest cause of donor deferral having deferral rate of 5.4%(n= 28) as shown in table 12 and figure 20 shown below.

Table 12 showing donor deferral on basis of high risk behaviour among donors

High risk behaviour	No. of cases	Percentage
Tattooing / Ear Piercing	28	5.4%
Intravenous Drug Abusers	8	1.5%
Hepatitis B,C virus/ HIV	4	0.8%
Deaddiction therapy	1	0.2%

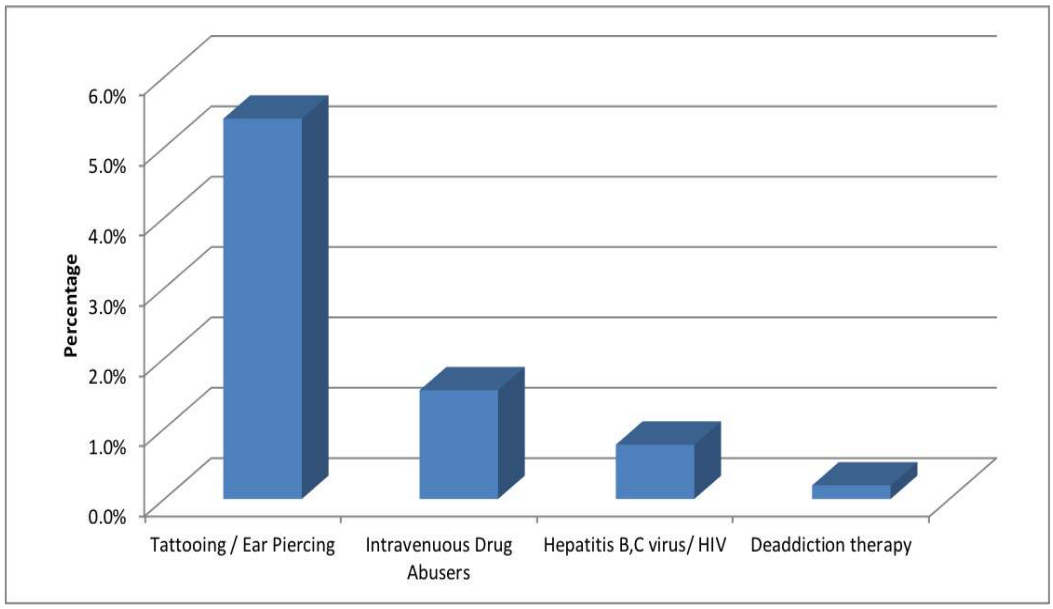


Figure 20. showing donor deferral on basis of high risk behaviour among donors.

Category number 7 included miscellaneous conditions of donor deferral which are depicted in table 13 and figure 21 as shown below.

Table 13 showing miscellaneous conditions causing donor deferral

Miscellaneous conditions	No. of cases	Percentage
QNS	10	1.9%
Vein not found	16	3.1%
Blood donation interval < 3 months	26	5.0%
Underage	5	1.0%
Overage	1	0.2%

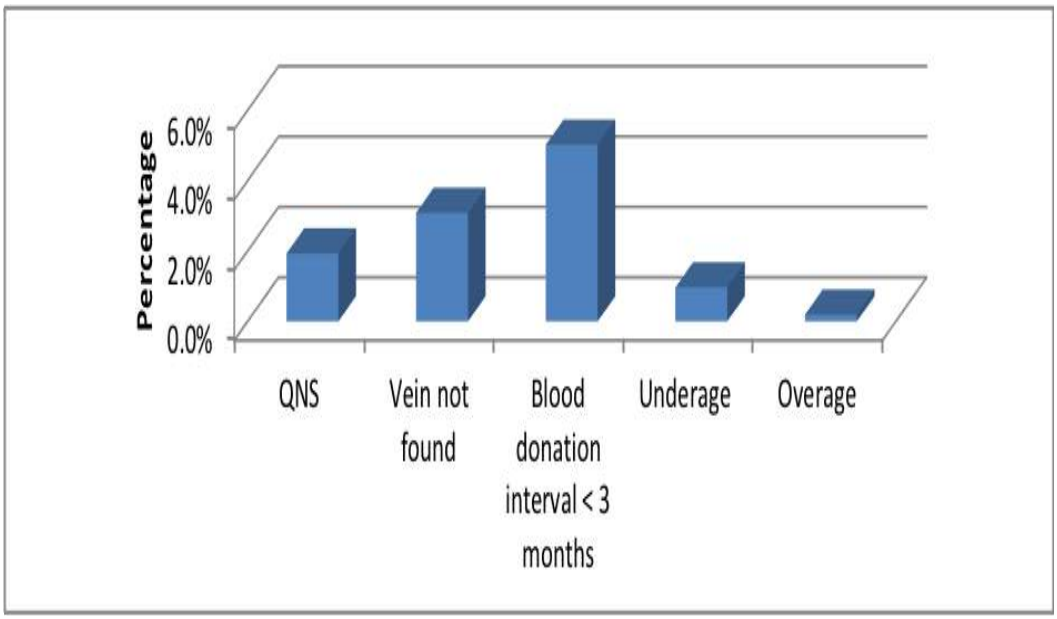


Figure 21. showing donor deferral on basis of high risk behaviour among donors

Belowin table 14, are enlisted various conditions causing permanent donor deferral.

Table 14. showing permanent causes of donor deferral.

Permanent causes	No. of cases	Percentage
Hypertensive cardiac disease	14	2.7%
Coronary artery disease	8	1.5%
Valvular heart disease	1	0.2%
Epilepsy	7	1.4%
Stroke	5	1.0%
Brain aneurysm	1	0.2%
Hypothyroidism	13	2.5%
Hyperthyroidism	7	1.4%
Uncontrolled Type 2 Diabetes Mellitus	6	1.2%
Type 1 Diabetes Mellitus	2	0.4%
Asthmatics on steroid	5	1.0%
Asthmatic Attacks	2	0.4%
Psoriasis	1	0.2%
Celiac disease	2	0.4%
Allergic to Almonds	1	0.2%
Ankylosing Spondylitis	1	0.2%
Polycythaemia Vera	4	0.8%
Hodgkin Lymphoma	1	0.2%
Hepatitis B, c virus, HIV	4	0.8%
Thyroidectomy surgery	1	0.2%
Kidney Transplant Recipient	1	0.2%

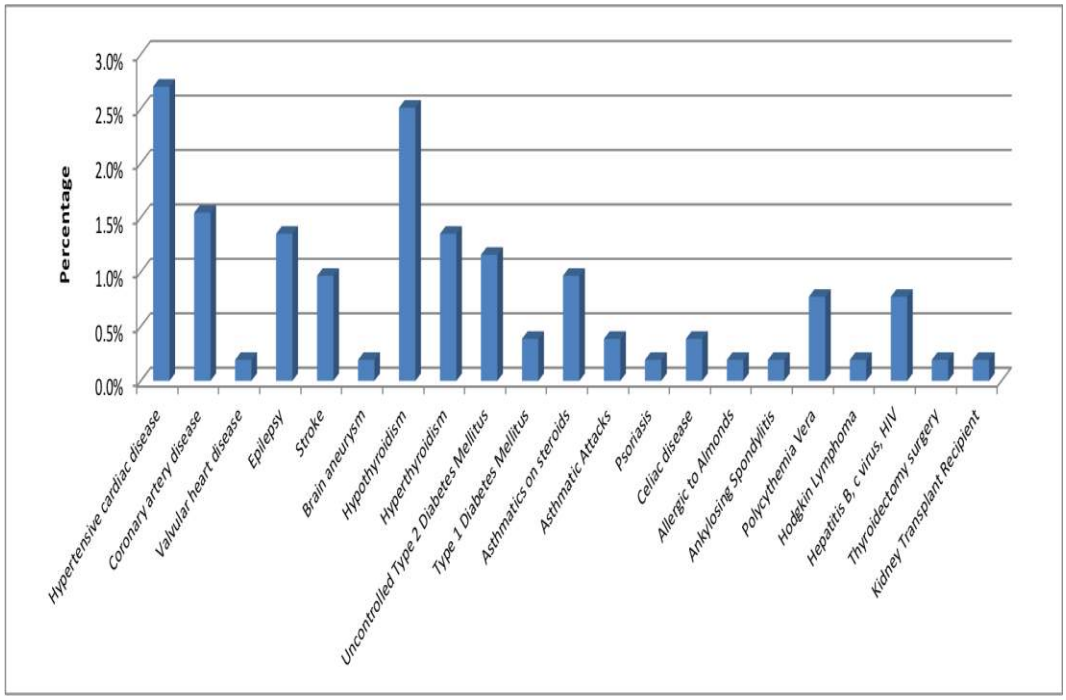


Figure 22. showing permanent causes of donor deferral.

DISCUSSION

Donor counselling and screening through questionnaire before donation is an important process not only to ensure blood safety but also to recruit and retain regular voluntary nonremunerated donors. The deferred donors are informed about the reason of deferral and counselled accordingly**.**

The deferral rate in our study was 2.3%. our study deferral rate was same as Jethani[59] et al study which was 2.56 %. Other studies deferralrate are compared with our study deferral rate depicted below in table 15. Variation in the deferral rate can be attributed to multiple factors such as type of donor, variation in donor selection criteria, and high risk sexual behaviour.

Table 15 comparing deferral rate with other studies

Study	**Year**	**State, country**	**Deferral Rate %**
Ahmad N et al[58]	2010	Delhi, India	12.6
Jethani et al[59]	2014	Rajasthan, India	2.56
Basavarajegowda et al[60]	2014	Pondicherry ,India	9.74
Chenna, et al[61]	2015	Karnataka, India	5.6
Kumar et al[62]	2016	Maharashtra, India	13.1
Valerian et al[63]	2016	Tanzania, east Africa	12.7
Ekwere et al[64]	2016	Nigeria, west Africa	16
Chauhan C et al[65]	2017	Uttar Pradesh ,India	5.56
Present study	***2020***	***Punjab, India***	***2.3***

The overall most common cause of deferral amongst blood donors in our study was medical conditions comprising 50.6% Low haemoglobin is 2nd most common cause of donor deferral in our study having 20.1% deferral rate. Like our study, most of other studies done in past were shown low haemoglobin as a main reason for deferral of blood donors as shown in Table 16 below.This indicates a high prevalence of

anaemia(particularly iron deficiency anaemia) in our population. The major causes of anaemia may be nutritional deficiency, worm infestation and frequent blood donation. A single unit of blood donation has been shown to result in depletion of iron up to 236 mg from body stores.[19]So, an adequate temporary deferral system for prospective donor with low haemoglobin is very essential to reduce the burden of anaemia, particularly iron deficiency anaemia in these population. The donors deferred due to anaemia should be given advice on proper nutritious diet, iron supplements and antihelminthic drugs along with awareness health programmes in the community level.

Table 16 comparing common causes of deferral and their rates

Study	**Year**	**State, country**	**common causes of deferral**
Ahmad N et al[58]	2010	Delhi , India	Anaemia(43.2%), Alcoholism (13%), Hypertension (10%)
Jethani et al[59]	2014	Rajasthan, India	Anaemia(37.44%), Alcoholism (13.82%), Underweight (11.76%),Hypertension (8.84%)
Basavarajegowda et al[60]	2014	Pondicherry, India	Anaemia,Alcoholism
Chenna, et al[61]	2015	Karnataka, India	Low haemoglobin (48.1%), Hypertension (16.4%), Underweight (8.9%).
Kumar et al[62]	2016	Maharashtra, India	Low haemoglobin (54.6%), Hypertension (4.1%)
Valerian et al[63]	2016	Tanzania, east Africa	Infections (62%),Low Haemoglobin, HepatitisB
Ekwere et al[64]	2016	Nigeria, west Africa	TTIs (50.4%), Anaemia (39%)
Chauhan C et al[65]	2017	Uttar Pradesh,India	Anaemia (42.26%), Hypertension with cardiac disorder (1.93%)
Present study	***2020***	***Punjab, India***	***Medical conditions (50.6%), Low Haemoglobin (20.1%)***

Other less common reasons of deferral in this study were underweight (2.9%), surgical causes (5.8%),high risk behaviour (7.7%) and miscellaneous causes(11.4%).Because of covid 19 pandemic, 1.7% deferral rate was due to post covid 19 infection .To reduce the loss of precious donor, regular health check-up, proper management and follow up can be carried out especially for temporarily deferred donors so that they can be reverted back to donor pool. For this, blood bank staffs including medical officer, counsellor and nurse can be trained properly

Permanent deferral observed in our study was 17.58% out of total deferral. Hypertensive cardiac disease (2.7%) is most common cause of permanent deferral in our study .The probable reasons for high BP can be sight of blood, first-time donation, fear of phlebotomy, and white coat hypertension. There were few donors who were diagnosed with high BP for the first time while majority of them being patient of uncontrolled hypertension. Owing to ignorance among people, hypertension often goes undiagnosed and usually is incidental finding. This signifies hypertension as the common modern day epidemic in health sector. Such donors should be counselled and guided to change their lifestyle and to further take the treatment from a physician.

Temporary deferrals were significantly more than the permanent deferrals (77.4% vs.17. 2%) signifying that most of the deferred donors can be recruited back to the donor pool if they are properly counselled and managed regarding their cause of deferral. This finding was similar to studies mentioned in review of literature depicted in table 17 below. Self donor deferral rate constitute 5.4% in our study. Self donordeferral is valid for reducing the risk of HIV transmission through blood transfusions and its implementation should be encouraged, when recruiting blood donors.

Table 17 comparing temporary and permanent deferral rate of various studies

Study	Year	State, country	Temporary Deferral Rate %	Permanent deferral rate%	Self-donor deferral rate%
Ahmad N et al[58]	2010	Delhi, India	97.58	2.42	-
Jethani et al[59]	2014	Rajasthan, India	87.48	12.52	-
Basavarajegowda et al[60]	2014	Pondicherry, India	83.11	16.89	-
Chenna, et al[61]	2015	Karnataka, India	98.1	1.9	-
Kumar et al[62]	2016	Maharashtra, India	90.3	9.7	-
Valerian et al[63]	2016	Tanzania, east Africa	50.7	49.3	-
Ekwere et al[64]	2016	Nigeria, west Africa	50.4	39	-
Chauhan C et al[65]	2017	Uttar Pradesh,India	95.16	4.84	-
Present study	***2020***	***Punjab, India***	***77.4***	***17.2***	***5.4***

Findings in our study show that 1st time donors accounted for 51% compared to regular donors (49%) of deferral population. In a study in Ahmad N et al, first time deferred donors represented 62.5% of the total deferral populations compared to 37.5% in regular donors. This difference may be due to the fact that previously donated donors are more aware of the process of blood donation , its advantages and loss of fear after first donation as compared to non-donors.

Table 18 comparing1st time and regular donors deferral rate of various studies

Study	Year	State, Country	1st time Donors Deferral Rate %	Regular Donors Deferral Rate%
Ahmad N et al[58]	2010	Delhi , India	62.5	37.5
Present study	***2020***	***Punjab, India***	***51***	***49***

In our study, most of the donors were men (73.7%) when compared with women (26.3%). This finding was similar to various studies like Ahemad et al and other studies depicted in table 19 below. Female gender contributing very less to the donor pool can be attributed to ignorance, fear, lack of motivation and awareness, sociocultural factors, and lesser opportunities among women for blood donation.

Table 19 showing the deferral rate among males and female population.

Study	Year	State, country	Male Deferral Rate %	Female deferral rate%
Ahmad N et al[58]	2010	Delhi , India	81.6	18.31
Chenna, et al[61]	2015	Karnataka, India	36.54	3.64
Kumar et al[62]	2016	Maharashtra, India	41.9	58.1
Valerian et al[63]	2016	Tanzania, east Africa	79.1	20.9
Present study	***2020***	***Punjab, India***	***73.7***	***26.3***

Voluntary donation was significantly higher than the replacement donation (70.3% vs. 29.7%). Jethani et al reported voluntary donation of 95.89%, also Ekwere et al. reported voluntary donation of 89.10%. Thus, our finding was similar to other studies. Large number of voluntary donation was possible owing to regular blood donation camps, donor sensitization, and awareness campaign.

Table 20. comparing voluntary and replacement donor deferral rate of various studies

Study	**Year**	**State, country**	**Voluntary Donors Deferral Rate %**	**Replacement Donors Deferral Rate%**
Jethani et al[59]	2014	Rajasthan , India	95.89	4.11
Ekwere et al[64]	2016	Nigeria, west Africa	89.1	10.9
Present study	***2020***	***Punjab, India***	***70.3***	***29.7***

Our study shows that most of the deferred donors (50.8%) were in the age group 18-30 years followed by age group 31-40yrs (27.2%). The deferral rate in 41-50 yrs age group is 14.9% and this is because most of our donors were of younger age group. Similar results were seen in the study by jethani et al.in which majority of donors were in the age group of 18-30 years (51.45%). It was also the case with other Indian studiesand studies from other countries as shown in table 21 shown below.

Table 21 comparing deferral rate of various studies on basis of common age group

Study	**Year**	**State, country**	**common age group**	**Deferral Rate %**
Ahmad N et al[58]	2010	Delhi , India	18-27	44.3
Jethani et al[59]	2014	Rajasthan , India	18-30	51.45
Chenna, et al[61]	2015	Karnataka, India	46-60	11.53
Kumar et al[62]	2016	Maharashtra, India	18-30	65.5
Valerian et al[63]	2016	Tanzania, east Africa	45-65	27.6
Ekwere et al[64]	2016	Nigeria, west Africa	21-30	49.1
Present study	***2020***	***Punjab, India***	***18-30***	***50.8***

On the basis of occupation status, maximum deferrals were seen in business class(23.6%), students (23.2%) and service class (22%). Jethani et al. also suggested maximum deferrals in students. Young donors majority being students, they should be motivated to become regular voluntary donors. It is a worrisome fact that a large number of students were rejected as these young adults are the main pillar of regular voluntary donation. So, still there is a need of health education among them.

Low weight in our study constitute 3.1% deferral rate from total donors deferred. Jethani et al also mentioned 13.44% donor deferral rate on basis of low weight in his study. It is also an important reason of deferral which again reflects poor nutritional status of the population. Because both anaemia and low weight are curable, a large number of temporary deferred donors can be recruited back into the donor pool on proper management.

Among the replacement donors, last donation < 3 months was one of the major reasons of deferral underlying the fact that they were forced to donate the blood by the situation rather than their own willingness for the same. These further strengthen our aim of absolute voluntary donation, as the quality of blood if had been donated by these short inter- donation replacement donors might not have been up to the standard.

SUMMARY AND CONCLUSION

Data on donor deferrals should be collected and regularly reviewed to enable the Blood Transfusion Services to assess the major causes of deferral, particularly those that result in the greatest numbers of donor deferrals and those presenting high risk to patients. These vary from country to country; hence there is a need to collect local data on which to base relevant decisions. The most common causes of donor deferral are of particular interest as these will indicate whether donor information and education may need to be improved or donor selection criteria should be reviewed. A deferral database will also indicate whether staff are interpreting the selection guidelines correctly and where further education and training should be focused.

Our study showed that although donor deferral rate were very much similar in different population, the reasons for deferral differ, reflecting difference in socioeconomic status and environment. In our study, the deferral rate was 2.3%, and most of the deferred donors were young adults with majority of them being the students deferred because of anaemia and underweight and among older people because of hypertension. All the potential donors deferred should be informed at the time of deferral about the cause and duration of deferral so that they can be recruited back to donor pool on correction of the cause of deferral at appropriate duration. It is important to provide donors with a clear message on their deferral status. Increasing public education on common causes of donor deferral may also lower the deferral rate by allowing the prospective donors to “pre-screen” themselves. So, to conclude, it is important to determine the rate and causes of donor deferral for the safety of blood transfusion and to guide the recruitment efforts to prevent the loss of precious blood.

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S.no.	Date	Type of Donation	1st/ Repeat	indoor/ outdoor	Age	Gender	Marital status	locality	city	state	Religion	surname	caste	Education	Occupation	Deferral type	Cause	medication	category
1	january	voluntary	1st time	indoor	21	female	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.Sc. Pass	service	temporary	Low hemoglobin	no	1
2	january	replacement	1st time	indoor	29	male	unmarried	urban	ludhiana	punjab	sikh	singh	Gujjar	diploma in computer enginering	service	temporary	fungal infection of skin	no	4
3	january	replacement	1st time	indoor	35	male	married	rural	barnala	punjab	sikh	singh	jatt	B.A. pass	farmer	temporary	gastroentrirtis ,on antibiotics	yes	4
4	january	replacement	1st time	indoor	42	male	married	rural	ludhiana	punjab	hindu	kumar	Ad dharmi	B.A. pass	service	temporary	fungal infection of skin , on fluconazole	yes	4
5	january	replacement	repeat	indoor	26	male	unmarried	urban	pathankot	punjab	sikh	ramgarhia	Jatt	B.Com pass	bussiness	temporary	gastroentrirtis , on antibiotics	yes	4
6	january	voluntary	repeat	indoor	34	female	married	urban	ludhiana	punjab	sikh	dhillon	jatt	MBBS,MD,DM	Doctor	temporary	Low hemoglobin	no	1
7	january	replacement	1st time	indoor	20	male	unmarried	urban	ludhiana	punjab	hindu	kumar	Ramdasia	B.Com 2nd yr	student	temporary	Low hemoglobin	no	1
8	january	voluntary	1st time	indoor	21	male	unmarried	rural	psachim bardhaman	west bengal	hindu	kale	Ad dharmi	B.A. pass	service	temporary	gastroentrirtis , on antibiotics	yes	4
9	january	replacement	repeat	indoor	55	male	married	urban	ludhiana	punjab	hindu	malhotra	khatri	B.Sc. Pass	bussiness	temporary	dengue	no	4
10	january	voluntary	1st time	outdoor	19	female	unmarried	urban	ludhiana	punjab	hindu	chopra	khatri	B.Com 1st yr	student	temporary	headache	no	4
11	january	voluntary	1st time	outdoor	19	male	unmarried	urban	ludhiana	punjab	hindu	kapoor	khatri	B.A. 1st year	student	permanent	Hepatitis B virus	no	6
12	january	voluntary	repeat	outdoor	41	female	married	urban	ludhiana	punjab	sikh	kaur	jatt	12th pass	housewife	temporary	1st day of mensturation	no	3
13	january	voluntary	repeat	outdoor	28	male	unmarried	urban	ludhiana	punjab	sikh	singh	Lohar	12th pass	social worker	permanent	Epilepsy	no	4
14	january	replacement	repeat	indoor	20	male	unmarried	urban	ludhiana	punjab	sikh	sidhu	jatt	B.Com 2nd yr	student	temporary	QNS	no	7
15	january	replacement	1st time	indoor	42	Female	married	rural	jalandhar	punjab	hindu	prasad	brahmin	12th pass	housewife	self deferral	hystrectomy surgery	no	7
16	january	voluntary	1st time	indoor	52	male	married	urban	jalandhar	punjab	hindu	aggarwal	baniya	B.A. pass	bussiness	temporary	Low hemoglobin	no	1
17	january	voluntary	1st time	indoor	35	female	married	rural	ludhiana	punjab	sikh	kaur	jatt	M.A.,M.PILL	service	temporary	Low hemoglobin	no	1
18	january	voluntary	repeat	indoor	38	female	married	urban	dwarka	new delhi	jain	jain	jain	M.com.,M.Ed.	service	temporary	Low hemoglobin	no	1
19	january	voluntary	1st time	outdoor	17	female	unmarried	urban	ludhiana	punjab	sikh	kainth	jatt	B.A. 1st year	student	temporary	underage , low weight	no	2,7
20	january	voluntary	1st time	outdoor	22	female	unmarried	urban	ludhiana	punjab	hindu	aggarwal	baniya	B.Com pass	student	temporary	Low hemoglobin	no	1
21	january	voluntary	repeat	outdoor	25	male	unmarried	rural	muktsar sahib	punjab	hindu	kumar	Ad dharmi	M.Sc. 1st year	student	self deferral	blood donation interval < 3months	no	7
22	january	voluntary	repeat	outdoor	44	male	married	rural	muktsar sahib	punjab	sikh	singh	jatt	12th pass	bussiness	permanent	stroke	no	4
23	january	replacement	1st time	indoor	21	male	unmarried	rural	ludhiana	punjab	sikh	singh	Ramgarhia	12th pass	labourer	temporary	sore throat, on medication	yes	4
24	january	voluntary	repeat	indoor	38	male	married	rural	jalandhar	punjab	sikh	singh	jatt	10th pass	farmer	temporary	hepatitis A virus	no	4
25	january	voluntary	1st time	indoor	21	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.Com 2nd yr	student	temporary	dengue	no	4
26	january	replacement	1st time	indoor	40	male	married	urban	ludhiana	punjab	sikh	singh	arora	B.Com pass	bussiness	temporary	hemorroidectomy surgery	no	5
27	january	voluntary	repeat	outdoor	44	male	married	urban	ludhiana	punjab	sikh	singh	jatt	B.A. pass	bussiness	temporary	antidepressants	no	4
28	january	voluntary	repeat	outdoor	51	female	married	urban	ludhiana	punjab	hindu	chowdhury	brahmin	B.Sc. Pass	housewife	permanent	rheumatoid arthritis , on steroids	yes	4
29	january	voluntary	repeat	outdoor	43	female	married	urban	ludhiana	punjab	sikh	deol	jatt	M.A. pass	housewife	self deferral	antidepressants	yes	4
30	january	voluntary	repeat	outdoor	40	female	married	urban	ludhiana	punjab	sikh	deol	jatt	B.A. pass	housewife	temporary	2nd day of mensturation	no	3
31	january	voluntary	1st time	outdoor	25	male	unmarried	urban	ludhiana	punjab	hindu	kumar	Ramdasia	12th pass	labourer	temporary	tattooing	no	6
32	january	replacement	repeat	indoor	28	male	unmarried	rural	ludhiana	punjab	sikh	singh	Ravidasia	12th pass	service	temporary	vein not found	no	7
33	january	voluntary	repeat	indoor	62	male	married	urban	amritsar	punjab	sikh	singh	kumhar	10th pass	labourer	permanent	Asthmatics, on steroids	yes	4
34	january	voluntary	1st time	outdoor	19	female	unmarried	rural	ludhiana	punjab	sikh	kaur	jatt	B.A. 1st year	student	temporary	Low hemoglobin	no	1
35	january	voluntary	1st time	outdoor	19	female	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.A. 1st year	student	temporary	Low hemoglobin	no	1
36	january	voluntary	repeat	outdoor	35	male	married	urban	ludhiana	punjab	sikh	singh	Ramdasia	M.A. pass	service	temporary	blood donation interval < 3months	no	7
37	january	voluntary	1st time	outdoor	19	female	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.Com 1st yr	student	temporary	Low hemoglobin	no	1
38	january	replacement	repeat	indoor	19	male	unmarried	urban	ludhiana	punjab	hindu	marwaha	brahmin	B.A. 1st year	student	temporary	acne vulgaris	no	4
39	january	voluntary	1st time	indoor	28	male	unmarried	rural	ludhiana	punjab	sikh	singh	Soi	B.Com pass	service	temporary	QNS	no	7
40	january	replacement	repeat	indoor	37	male	married	rural	ludhiana	punjab	hindu	kumar	arora	BCA	bussiness	permanent	Hypertension, Stroke	no	4
41	january	replacement	1st time	indoor	21	male	unmarried	urban	ludhiana	punjab	sikh	khangura	jatt	ITI Manooke	student	temporary	allergic skin disease	no	4
42	february	replacement	repeat	indoor	22	male	unmarried	urban	ludhiana	punjab	hindu	pal	Ad dharmi	multimedia animation diploma	labourer	temporary	allergic skin disease	no	4
43	february	voluntary	repeat	indoor	43	male	married	urban	ludhiana	punjab	hindu	sharma	brahmin	10th pass	labourer	self deferral	allergic skin disease	no	4
44	february	voluntary	repeat	indoor	42	male	married	urban	ludhiana	punjab	sikh	bansal	jatt	10th pass	labourer	temporary	antibiotics	yes	4
45	february	replacement	repeat	indoor	27	male	unmarried	urban	ludhiana	punjab	jain	jain	jain	B.Com pass	bussiness	temporary	allergic rhinitis	no	4
46	february	replacement	1st time	indoor	29	male	unmarried	urban	ludhiana	punjab	hindu	singh	rajput	MBA	service	temporary	gastroentrirtis , on antibiotics	yes	4
47	february	voluntary	1st time	indoor	25	male	unmarried	urban	ludhiana	punjab	hindu	kashyap	brahmin	B.Com pass	bussiness	temporary	allergic skin disease	no	4
48	february	replacement	1st time	indoor	45	female	married	rural	ludhiana	punjab	sikh	kaur	Ravidasia	B.A. pass	housewife	temporary	Low hemoglobin	no	1
49	february	replacement	1st time	indoor	45	female	married	urban	ludhiana	punjab	hindu	kaura	rajput	M.A.,B.Ed.	housewife	temporary	Low hemoglobin	no	1
50	february	replacement	1st time	indoor	52	male	married	rural	ludhiana	punjab	hindu	sunyara	Gujjar	8th pass	labourer	temporary	allergic skin disease	no	4
51	february	voluntary	1st time	indoor	21	female	unmarried	urban	ludhiana	punjab	hindu	serene	Ad dharmi	psychology final year	student	temporary	Low hemoglobin	no	1
52	february	replacement	repeat	indoor	38	male	married	rural	sangrur	punjab	sikh	singh	jatt	10th pass	farmer	permanent	intravenous drug abuser	no	6
53	february	replacement	1st time	indoor	30	male	unmarried	urban	jalandhar	punjab	sikh	singh	jatt	B.Tec.	engineer	temporary	allergic skin disease	no	4
54	february	replacement	repeat	indoor	30	male	unmarried	rural	ludhiana	punjab	sikh	singh	Jatt	6th pass	bussiness	permanent	intravenous drug abuser	no	6
55	february	replacement	1st time	indoor	35	male	married	rural	kapurthala	punjab	sikh	singh	Jatt	10th pass	bussiness	permanent	Asthmatics, on steroids	yes	4
56	february	voluntary	repeat	indoor	29	male	unmarried	urban	amritsar	punjab	sikh	bhatti	Ravidasia	B.A. pass	bussiness	temporary	tetanus toxoid vaccination	no	4
57	february	voluntary	1st time	indoor	31	female	married	urban	jammu	jammu and kashmir	sikh	singh	Nai	M.A. pass	housewife	temporary	Low hemoglobin	no	1
58	february	voluntary	1st time	indoor	20	female	unmarried	urban	ludhiana	punjab	sikh	kaur	jatt	BCA	student	temporary	antidepressants	yes	4
59	february	replacement	repeat	indoor	22	male	married	rural	barnala	punjab	sikh	singh	jatt	12th pass	Driver	temporary	sore throat, on medication	yes	4
60	february	replacement	repeat	indoor	40	male	married	urban	ludhiana	punjab	hindu	chawala	khatri	12th pass	bussiness	self deferral	scabies skin disease	no	4
61	february	replacement	repeat	indoor	23	male	unmarried	rural	moga	punjab	sikh	brar	jatt	B.Com 2nd yr	student	temporary	dog bite	no	4
62	february	voluntary	repeat	indoor	36	male	married	rural	moga	punjab	sikh	singh	jatt	B.Sc. Pass	service	temporary	road side accident	no	5
63	february	voluntary	1st time	indoor	37	female	married	urban	ludhiana	punjab	sikh	dang	jatt	12th pass	housewife	permanent	hypothyroidism, on thyonorm medication, low hemoglobin	yes	1,4
64	february	replacement	1st time	indoor	35	female	married	urban	ludhiana	punjab	sikh	kaur	jatt	B.A. pass	housewife	self deferral	pregnancy	no	3
65	february	voluntary	repeat	indoor	19	male	unmarried	urban	ludhiana	punjab	hindu	narang	arora	12th pass	student	temporary	blood donation interval < 3months	no	7
66	february	replacement	repeat	indoor	24	male	unmarried	rural	sangrur	punjab	hindu	goyal	baniya	MBA	bussiness	self deferral	allergic skin disease	no	4
67	february	voluntary	1st time	indoor	31	male	married	urban	ludhiana	punjab	hindu	kumar	Ad dharmi	B.Sc. Pass	service	temporary	typhoid	no	4
68	february	voluntary	repeat	indoor	42	female	married	urban	ludhiana	punjab	hindu	deora	rajput	B.Com pass	housewife	temporary	Low hemoglobin	no	1
69	february	voluntary	1st time	indoor	21	male	unmarried	urban	pathankot	punjab	hindu	kumar	Ramdasia	12th pass	labourer	temporary	tattooing	no	6
70	february	voluntary	repeat	indoor	25	male	unmarried	rural	barnala	punjab	sikh	singh	jatt	B.A. pass	bussiness	self deferral	internal fixation of right hand surgery	no	5
71	february	replacement	1st time	indoor	34	male	married	rural	sangrur	punjab	sikh	singh	Soi	M.A. pass	service	permanent	Asthmatics, on steroids	yes	4
72	february	replacement	1st time	indoor	18	female	unmarried	urban	ludhiana	punjab	hindu	rawat	rajput	BBA 2nd year	student	temporary	Low hemoglobin	no	1
73	february	voluntary	1st time	indoor	34	female	married	urban	ludhiana	punjab	hindu	arora	arora	B.A. pass	housewife	temporary	Low hemoglobin	no	1
74	february	replacement	1st time	indoor	21	male	unmarried	rural	sangrur	punjab	sikh	singh	kumhar	B.A. pass	service	temporary	scabies skin disease	no	4
75	february	replacement	repeat	indoor	26	male	unmarried	rural	moga	punjab	sikh	singh	jatt	12th pass	driver	temporary	steroid injection	no	4
76	february	voluntary	repeat	indoor	22	male	unmarried	rural	jalandhar	punjab	sikh	kumar	Ravidasia	10th pass	farmer	temporary	tattooing	no	6
77	february	voluntary	1st time	indoor	30	male	married	urban	amritsar	punjab	hindu	kumar	Ad dharmi	8th pass	bussiness	permanent	hypothyroidism, on thyonorm medication	yes	4
78	february	voluntary	1st time	indoor	47	female	married	urban	pathankot	punjab	hindu	mahajan	baniya	10th pass	housewife	temporary	Low hemoglobin	no	1
79	february	voluntary	1st time	indoor	45	male	married	urban	ludhiana	punjab	hindu	kumar	Ramdasia	12th pass	service	permanent	ankylosing spondylitis	no	4
80	february	voluntary	repeat	indoor	50	male	married	urban	ludhiana	punjab	sikh	singh	jatt	B.A. pass	bussiness	temporary	antibiotics	yes	4
81	february	voluntary	1st time	indoor	20	female	unmarried	urban	ludhiana	punjab	sikh	kaur	jatt	BBA 2nd year	student	temporary	Low hemoglobin	no	1
82	february	voluntary	repeat	indoor	23	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.A. pass	farmer	temporary	tattooing	no	6
83	february	replacement	repeat	indoor	27	male	unmarried	rural	sangrur	punjab	sikh	singh	jatt	12th pass	farmer	temporary	gastroentrirtis, on antibiotics	yes	4
84	february	replacement	repeat	indoor	55	male	married	rural	nawanshahr	punjab	sikh	singh	jatt	10th pass	farmer	temporary	Low hemoglobin	no	1
85	february	voluntary	repeat	indoor	29	male	unmarried	rural	bathinda	punjab	sikh	singh	jatt	M.Com. Pass	farmer	temporary	fever	no	4
86	february	replacement	repeat	indoor	26	female	unmarried	urban	ludhiana	punjab	hindu	raley	Ravidasia	B.A. pass	service	temporary	Low hemoglobin	no	1
87	february	voluntary	repeat	outdoor	26	male	unmarried	rural	sangrur	punjab	sikh	singh	jatt	12th pass	farmer	temporary	antibiotics, anti allergic medication	yes	4
88	february	voluntary	repeat	outdoor	30	male	married	rural	sangrur	punjab	sikh	singh	jatt	12th pass	farmer	temporary	allergic skin disease	no	4
89	february	voluntary	repeat	outdoor	22	male	unmarried	rural	moga	punjab	sikh	singh	jatt	B.Com 2nd yr	student	temporary	blood donation interval < 3months	no	7
90	february	voluntary	1st time	outdoor	46	male	married	rural	moga	punjab	sikh	singh	jatt	12th pass	farmer	permanent	hyperthyroidism	no	4
91	february	voluntary	1st time	outdoor	39	male	married	rural	moga	punjab	sikh	singh	jatt	10th pass	farmer	self deferral	hypertension	no	4
92	february	voluntary	repeat	outdoor	32	male	married	rural	moga	punjab	sikh	singh	jatt	12th pass	farmer	permanent	polycythemia vera , on aspirin medication	yes	4
93	february	voluntary	repeat	outdoor	43	male	married	rural	moga	punjab	sikh	singh	jatt	12th pass	farmer	temporary	laproscopic cholecysectomy surgery	no	5
94	february	voluntary	1st time	outdoor	23	male	unmarried	urban	ludhiana	punjab	sikh	singh	Nai	B.A. pass	student	temporary	Low hemoglobin	no	1
95	february	voluntary	repeat	outdoor	29	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	12th pass	farmer	temporary	laproscopic appendectomy surgery	no	5
96	february	voluntary	repeat	outdoor	29	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.A. pass	bussiness	temporary	vein not found	no	7
97	february	voluntary	repeat	outdoor	31	male	married	urban	hoshiarpur	punjab	sikh	singh	soi	B.Com pass	service	temporary	ear piercing	no	6
98	february	voluntary	repeat	outdoor	24	male	unmarried	urban	ludhiana	punjab	hindu	chand	rajput	B.Sc. Pass	service	temporary	viral infection	no	4
99	february	voluntary	repeat	outdoor	31	female	married	urban	ludhiana	punjab	hindu	dingra	arora	B.A. pass	housewife	temporary	Low hemoglobin	no	1
100	february	voluntary	repeat	outdoor	52	male	married	urban	ludhiana	punjab	hindu	kumar	Ramdasia	B.Com pass	bussiness	permanent	stroke	no	4

S.no.	Date	Type of Donation	1st/ Repeat	indoor/ outdoor	Age	Gender	Marital status	locality	city	state	Religion	surname	caste	Education	Occupation	Deferral type	Cause	medication	category
101	february	voluntary	1st time	outdoor	25	female	unmarried	rural	ludhiana	punjab	sikh	kaur	Jatt	12th pass	service	temporary	Low hemoglobin	no	1
102	february	voluntary	repeat	outdoor	31	male	married	urban	ludhiana	punjab	sikh	singh	jatt	12th pass	bussiness	temporary	gastroentrirtis , on antibiotics	yes	4
103	february	voluntary	repeat	outdoor	27	male	unmarried	urban	ludhiana	punjab	sikh	grewal	jatt	12th pass	bussiness	temporary	gastroentrirtis , on antibiotics	yes	4
104	february	voluntary	repeat	outdoor	23	female	married	urban	ludhiana	punjab	sikh	singh	jatt	M.A.,B.Ed.	service	temporary	dental procedure, on amoxicillin	yes	4,5
105	february	voluntary	1st time	outdoor	23	female	unmarried	rural	ludhiana	punjab	sikh	kaur	Gujjar	12th pass	service	temporary	Low hemoglobin	no	1
106	february	voluntary	repeat	outdoor	30	male	married	urban	ludhiana	punjab	sikh	singh	Nai	B.A. pass	service	temporary	Low hemoglobin	no	1
107	february	voluntary	1st time	outdoor	20	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.Com 2nd yr	student	temporary	typhoid	no	4
108	february	voluntary	1st time	outdoor	19	female	unmarried	rural	ludhiana	punjab	sikh	kaur	Ravidasia	B.Sc. 2nd yr	student	temporary	Low hemoglobin	no	1
109	february	voluntary	1st time	outdoor	19	male	unmarried	rural	jalandhar	punjab	hindu	singla	baniya	B.Com 1st yr	student	temporary	QNS	no	7
110	february	voluntary	1st time	outdoor	21	female	unmarried	urban	ludhiana	punjab	hindu	manik	baniya	M.A. 1st yr	student	temporary	Low hemoglobin	no	1
111	february	voluntary	1st time	outdoor	22	female	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Com 2nd yr	student	temporary	Low hemoglobin	no	1
112	february	voluntary	1st time	outdoor	22	female	unmarried	urban	ludhiana	punjab	hindu	tiwari	brahmin	B.Sc. 2nd yr	student	temporary	Low hemoglobin	no	1
113	february	voluntary	1st time	outdoor	21	female	unmarried	urban	ludhiana	punjab	hindu	bhushan	baniya	M.A. 1st yr	student	temporary	Low hemoglobin	no	1
114	february	voluntary	1st time	outdoor	22	female	unmarried	urban	ludhiana	punjab	hindu	thakur	rajput	M.A. 1st yr	student	temporary	Low hemoglobin	no	1
115	february	voluntary	repeat	outdoor	22	female	unmarried	rural	jalandhar	punjab	sikh	kaur	jatt	M.A. 1st yr	student	temporary	Low hemoglobin	no	1
116	february	voluntary	1st time	outdoor	23	female	unmarried	urban	ludhiana	punjab	hindu	kumari	Ad dharmi	M.A. 2nd yr	student	temporary	Low hemoglobin	no	1
117	february	voluntary	1st time	outdoor	20	female	unmarried	rural	ludhiana	punjab	hindu	devi	Ad dharmi	B.Sc. Final year	student	permanent	hypothyroidism, thyonorm medication	yes	4
118	february	voluntary	1st time	outdoor	19	male	unmarried	urban	ludhiana	punjab	hindu	kumar	chamar	B.A. 1st year	student	temporary	Low hemoglobin	no	1
119	february	voluntary	repeat	outdoor	21	female	unmarried	urban	ludhiana	punjab	hindu	tandon	khatri	B.Com 1st yr	student	temporary	2nd day of mensturation	no	3
120	february	voluntary	repeat	outdoor	20	female	unmarried	rural	ludhiana	punjab	sikh	kaur	jatt	B.Com 1st yr	student	temporary	Low hemoglobin	no	1
121	february	voluntary	1st time	outdoor	21	female	unmarried	urban	ludhiana	punjab	hindu	kumari	Ramdasia	B.Sc. 2nd yr	student	temporary	Low hemoglobin	no	1
122	february	voluntary	1st time	outdoor	18	female	unmarried	urban	ludhiana	punjab	hindu	kumari	Ad dharmi	B.Com 1st yr	student	temporary	ear piercing	no	6
123	february	voluntary	repeat	outdoor	21	male	unmarried	urban	ludhiana	punjab	muslim	sultan	shia	M.A. 1st yr	student	temporary	Low hemoglobin	no	1
124	february	voluntary	1st time	outdoor	20	male	unmarried	urban	ferozpur	punjab	hindu	kumar	Ravidasia	B.Com. 3rd yr	student	temporary	dengue	no	4
125	february	voluntary	1st time	outdoor	18	male	unmarried	urban	ludhiana	punjab	hindu	gautam	brahmin	B.Sc. 1st yr	student	temporary	low weight	no	2
126	february	voluntary	1st time	outdoor	21	female	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	M.Com. 1st yr	student	temporary	antibiotics	yes	4
127	february	voluntary	1st time	outdoor	20	male	unmarried	urban	ludhiana	punjab	hindu	saggar	rajput	B.Sc. 2nd yr	student	temporary	Low hemoglobin	no	1
128	february	voluntary	1st time	outdoor	19	male	unmarried	urban	ludhiana	punjab	hindu	kansal	baniya	B.Com 1st yr	student	temporary	unknown medication	yes	4
129	february	voluntary	1st time	outdoor	21	female	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	M.Sc. 1st year	student	temporary	Low hemoglobin	no	1
130	february	voluntary	1st time	outdoor	20	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.A. 2nd year	student	temporary	Low hemoglobin	no	1
131	february	voluntary	repeat	outdoor	20	female	unmarried	urban	ludhiana	punjab	hindu	verma	Lohar	B.Sc. 1st yr	student	temporary	low weight	no	2
132	february	voluntary	1st time	outdoor	20	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.A. 2nd year	student	permanent	allergic to almonds, increase IgE levels , on NSAIDS	yes	4
133	february	voluntary	1st time	outdoor	19	female	unmarried	urban	ludhiana	punjab	hindu	rani	Ramdasia	B.Sc. 2nd yr	student	temporary	low weight	no	2
134	february	voluntary	1st time	outdoor	19	female	unmarried	rural	ludhiana	punjab	sikh	kaur	jatt	B.Sc. 3rd yr	student	temporary	low weight	no	2
135	february	voluntary	1st time	outdoor	21	female	unmarried	rural	ludhiana	punjab	sikh	kaur	jatt	B.Sc. 3rd yr	student	temporary	Low hemoglobin	no	1
136	february	voluntary	1st time	outdoor	20	female	unmarried	urban	ludhiana	punjab	sikh	kaur	jatt	B.Sc. 3rd yr	student	temporary	Low hemoglobin	no	1
137	february	voluntary	1st time	outdoor	20	female	unmarried	urban	ludhiana	punjab	Hindu	rani	mazhabi	B.Sc. 3rd yr	student	temporary	Low hemoglobin	no	1
138	february	voluntary	1st time	outdoor	19	female	unmarried	urban	ludhiana	punjab	hindu	chand	rajput	B.Com 1st yr	student	temporary	Low hemoglobin	no	1
139	february	voluntary	1st time	outdoor	22	female	unmarried	urban	ludhiana	punjab	sikh	kaur	chang	M.A. 1st yr	student	temporary	Low hemoglobin	no	1
140	february	voluntary	1st time	outdoor	18	female	unmarried	urban	ludhiana	punjab	hindu	goyal	baniya	B.Com 1st yr	student	temporary	4th day of mensturation	no	3
141	february	voluntary	1st time	outdoor	18	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	BCA 1st yr	student	temporary	Low hemoglobin	no	1
142	february	voluntary	1st time	outdoor	19	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.A. 1st year	student	temporary	QNS	no	7
143	february	voluntary	repeat	outdoor	53	male	married	urban	ludhiana	punjab	hindu	kumar	chamar	B.A. pass	service	permanent	coronary artery disease	no	4
144	february	voluntary	repeat	outdoor	48	male	married	urban	ludhiana	punjab	hindu	kumar	rajput	B.Com pass	bussiness	temporary	antibiotics , NSAIDS	yes	4
145	february	voluntary	repeat	outdoor	34	male	married	urban	ludhiana	punjab	hindu	garg	baniya	12th pass	bussiness	temporary	typhoid	no	4
146	february	voluntary	repeat	outdoor	36	male	married	urban	ludhiana	punjab	hindu	kumar	Ramdasia	B.Sc. Pass	service	temporary	fever	no	4
147	february	voluntary	repeat	outdoor	34	male	married	rural	ludhiana	punjab	sikh	singh	Jatt	12th pass	farmer	temporary	antibiotics	yes	4
148	february	voluntary	repeat	outdoor	40	male	married	rural	sangrur	punjab	sikh	singh	Kumhar	12th pass	bussiness	permanent	hypertension	no	4
149	february	voluntary	repeat	outdoor	29	male	married	rural	ludhiana	punjab	sikh	singh	Jatt	B.Com pass	service	temporary	antibiotics	yes	4
150	february	voluntary	repeat	outdoor	41	male	married	rural	ludhiana	punjab	sikh	singh	Jatt	B.A. pass	farmer	temporary	fungal infection of skin	no	4
151	february	voluntary	1st time	outdoor	49	male	married	rural	ludhiana	punjab	sikh	singh	Nai	8th pass	driver	temporary	dental procedure	no	5
152	february	voluntary	1st time	outdoor	45	male	married	rural	ludhiana	punjab	sikh	singh	jatt	M.A.,B.Ed.	service	permanent	polycythemia vera	no	4
153	march	voluntary	repeat	indoor	38	female	married	urban	kotakpura	punjab	hindu	kalra	khatri	12th pass	service	permanent	hypothyroidism, thyonorm medication	yes	4
154	march	voluntary	repeat	indoor	42	female	unmarried	urban	jalandhar	punjab	sikh	kaur	jatt	12th pass	bussiness	temporary	Low hemoglobin	no	1
155	march	voluntary	1st time	indoor	30	female	married	urban	ludhiana	punjab	hindu	khanna	khatri	B.A. pass	housewife	permanent	hypothyroidism, thyonorm medication	yes	4
156	march	replacement	repeat	indoor	26	male	married	urban	ludhiana	punjab	sikh	singh	jatt	8th pass	bussiness	temporary	tattooing	no	6
157	march	voluntary	repeat	indoor	20	male	unmarried	urban	ludhiana	punjab	hindu	masiah	balmiki	B.A. 2nd year	student	self deferral	blood donation interval < 3months	no	7
158	march	voluntary	repeat	indoor	34	male	married	urban	ludhiana	punjab	hindu	bisht	brahmin	M.Com. Pass	bussiness	temporary	allergic skin disease	no	4
159	march	voluntary	repeat	indoor	38	male	married	rural	patiala	punjab	hindu	kumar	balmiki	illitrate	labourer	temporary	allergic skin disease	no	4
160	march	voluntary	1st time	indoor	32	male	married	rural	patiala	punjab	hindu	kumar	chamar	4th pass	labourer	temporary	allergic skin disease	no	4
161	march	voluntary	repeat	indoor	42	male	married	rural	nakoder	punjab	sikh	singh	jatt	B.A. pass	farmer	temporary	viral infection, on tamiflu	yes	4
162	march	voluntary	1st time	indoor	31	male	unmarried	rural	moga	punjab	sikh	singh	jatt	B.Sc. Pass	service	temporary	chalazion surgery	no	5
163	march	voluntary	1st time	indoor	35	female	married	urban	ludhiana	punjab	jain	jain	jain	12th pass	labourer	self deferral	abortion, on MTP medication	yes	3,4
164	march	voluntary	1st time	indoor	43	male	married	rural	fatehgarh sahib	punjab	hindu	prasher	brahmin	10th pass	bussiness	temporary	vein not found	no	7
165	march	voluntary	repeat	indoor	27	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	BCA pass	service	temporary	scabies skin disease	no	4
166	march	voluntary	repeat	indoor	38	male	married	rural	phagwara	punjab	sikh	singh	mazhabi	12th pass	bussiness	permanent	hyperthyroidism	no	4
167	march	replacement	repeat	indoor	45	male	married	rural	ferozpur	punjab	sikh	singh	jatt	12th pass	farmer	permanent	kidney transplant recipent	no	5
168	march	replacement	1st time	indoor	26	male	unmarried	rural	nawanshahr	punjab	sikh	singh	jatt	10th pass	farmer	temporary	tattooing	no	6
169	march	voluntary	repeat	indoor	34	male	married	urban	phagwara	punjab	hindu	kumar	Ravidasia	B.A. pass	service	permanent	epilepsy , on lorazepam	yes	4
170	march	replacement	repeat	indoor	48	male	married	urban	ludhiana	punjab	hindu	kumar	balmiki	12th pass	bussiness	temporary	cough, cold, on medication	yes	4
171	march	voluntary	1st time	indoor	24	male	unmarried	urban	ludhiana	punjab	hindu	bhel	khatri	12th pass	service	temporary	tattooing	no	6
172	march	voluntary	repeat	indoor	21	female	unmarried	urban	ludhiana	punjab	sikh	kaur	jatt	12th pass	student	temporary	Low hemoglobin	no	1
173	march	voluntary	1st time	indoor	34	female	married	rural	ludhiana	punjab	hindu	lumba	khatri	12th pass	bussiness	temporary	Low hemoglobin	no	1
174	march	replacement	repeat	indoor	39	male	married	urban	ludhiana	punjab	jain	jain	jain	B.A. pass	bussiness	self deferral	herniorraphy surgery	no	5
175	march	voluntary	1st time	indoor	27	male	married	urban	bhiwani	Haryana	hindu	tanwar	rajput	B.Com pass	service	temporary	antibiotics	yes	4
176	march	replacement	1st time	indoor	20	male	unmarried	urban	ludhiana	punjab	hindu	Malhotra	khatri	B.Com 2nd yr	student	temporary	vein not found	no	7
177	march	voluntary	1st time	indoor	20	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	12th pass	labourer	temporary	dog bite	no	4
178	march	voluntary	repeat	indoor	47	female	married	urban	moga	punjab	hindu	mahajan	baniya	M.A. pass	housewife	temporary	1st day of mensturation	no	3
179	march	voluntary	repeat	indoor	44	male	married	urban	gurdaspur	punjab	hindu	mahajan	baniya	B.A. pass	bussiness	temporary	cough, cold	no	4
180	march	replacement	repeat	indoor	30	male	married	rural	jalandhar	punjab	sikh	singh	jatt	illitrate	farmer	temporary	fungal infection	no	4
181	march	replacement	repeat	indoor	24	male	unmarried	urban	ludhiana	punjab	hindu	kumar	chamar	4th pass	labourer	permanent	intravenous drug abuser	no	6
182	march	replacement	1st time	indoor	28	male	unmarried	rural	muktsar sahib	punjab	sikh	singh	mazhabi	10th pass	labourer	temporary	allergic skin disease	no	4
183	march	replacement	repeat	indoor	38	male	married	rural	ferozpur	punjab	sikh	singh	Soi	8th pass	labourer	permanent	Epilepsy	no	4
184	march	replacement	1st time	indoor	40	male	married	urban	fatehgarh sahib	punjab	sikh	singh	Lohar	8th pass	service	permanent	hyperthyroidism	no	4
185	march	voluntary	repeat	outdoor	39	female	married	rural	sangrur	punjab	hindu	goyal	baniya	12th pass	housewife	temporary	dengue	no	4
186	march	voluntary	1st time	outdoor	38	female	married	rural	sangrur	punjab	hindu	dhand	khatri	12th pass	housewife	permanent	Diabetes mellitius type 1 , on insulin.	yes	4
187	march	voluntary	repeat	outdoor	52	male	married	rural	sangrur	punjab	sikh	singh	jatt	B.A. pass	Farmer	permanent	hypertension	no	4
188	march	voluntary	repeat	outdoor	37	male	married	rural	sangrur	punjab	sikh	singh	jatt	10th pass	farmer	permanent	coronary artery disease	no	4
189	march	voluntary	repeat	outdoor	47	male	married	rural	sangrur	punjab	sikh	singh	chang	B.Com pass	service	temporary	fungal infection (tinea corporis)	no	4
190	march	voluntary	repeat	outdoor	28	male	unmarried	rural	sangrur	punjab	sikh	singh	Ravidasia	10th pass	Driver	temporary	blood donation interval < 3months	no	7
191	march	voluntary	1st time	outdoor	22	female	unmarried	rural	sangrur	punjab	hindu	singla	baniya	B.A. pass	service	temporary	Low hemoglobin	no	1
192	march	voluntary	1st time	outdoor	29	male	married	rural	sangrur	punjab	hindu	goyal	baniya	B.A. pass	bussiness	permanent	hypertension , epistaxis	no	4
193	march	voluntary	repeat	outdoor	58	male	married	rural	sangrur	punjab	hindu	singla	baniya	M.Com. Pass	service	temporary	femur fracture fixation surgery	no	5
194	march	voluntary	repeat	outdoor	47	female	married	rural	sangrur	punjab	hindu	garg	baniya	B.Com pass	service	temporary	allergic skin disease	no	4
195	march	voluntary	repeat	outdoor	33	male	married	rural	sangrur	punjab	hindu	kumar	Ramdasia	B.A. pass	service	temporary	dengue	no	4
196	march	voluntary	repeat	outdoor	42	male	married	rural	sangrur	punjab	sikh	singh	jatt	B.Sc. Pass	service	temporary	femur fracture, road side accident	no	5
197	march	voluntary	repeat	outdoor	38	male	married	rural	sangrur	punjab	sikh	singh	Nai	B.A. pass	service	temporary	viral hepatitis / Hepatitis A virus	no	4
198	march	voluntary	repeat	outdoor	25	male	unmarried	rural	sangrur	punjab	sikh	singh	jatt	B.A. pass	farmer	temporary	dengue	no	4
199	march	voluntary	repeat	outdoor	56	male	married	rural	sangrur	punjab	sikh	singh	jatt	M.Com. Pass	service	permanent	hypothyroidism,on thyonorm medication	yes	4
200	march	voluntary	repeat	outdoor	31	male	married	rural	sangrur	punjab	hindu	singla	baniya	B.Com pass	bussiness	temporary	tattooing	no	6
201	march	voluntary	1st time	outdoor	22	male	unmarried	rural	sangrur	punjab	sikh	singh	jatt	12th pass	farmer	temporary	anxiety	no	4
202	march	voluntary	repeat	outdoor	42	male	married	rural	sangrur	punjab	jain	jain	jain	B.A. pass	bussiness	self deferral	lower respiratory tract infection , on antibiotics	yes	4
203	march	voluntary	repeat	outdoor	37	male	married	rural	sangrur	punjab	hindu	bansal	baniya	M.A. pass	service	temporary	cough, chest pain	no	4
204	march	voluntary	repeat	outdoor	40	male	married	rural	bathinda	punjab	sikh	singh	jatt	10th pass	farmer	temporary	cough, cold	no	4
205	march	voluntary	repeat	outdoor	35	male	married	rural	bathinda	punjab	hindu	kumar	chamar	12th pass	labourer	temporary	blood donation interval < 3months	no	7

S.no.	Date	Type of Donation	1st/ Repeat	indoor/ outdoor	Age	Gender	Marital status	locality	city	state	Religion	surname	caste	Education	Occupation	Deferral type	Cause	medication	category
206	march	voluntary	repeat	outdoor	50	male	married	rural	bathinda	punjab	sikh	singh	jatt	10th pass	farmer	self deferral	coronary artery disease, on aspirin	yes	4
207	march	voluntary	repeat	outdoor	24	male	married	rural	bathinda	punjab	sikh	singh	Soi	8th pass	labourer	permanent	epilepsy	no	4
208	march	voluntary	repeat	outdoor	55	male	married	rural	bathinda	punjab	sikh	singh	jatt	10th pass	farmer	permanent	hypertension	no	4
209	march	voluntary	repeat	outdoor	39	male	married	urban	ludhiana	punjab	hindu	aggarwal	baniya	B.A. pass	bussiness	permanent	stroke	no	4
210	march	voluntary	1st time	outdoor	55	female	married	urban	ludhiana	punjab	jain	jain	jain	B.A. pass	housewife	temporary	Low hemoglobin	no	1
211	march	voluntary	repeat	outdoor	54	male	married	urban	ludhiana	punjab	sikh	khera	jatt	B.Com pass	charted accountant	temporary	coronary artery disease, on aspirin	yes	4
212	march	voluntary	1st time	outdoor	30	female	married	urban	ludhiana	punjab	sikh	singh	jatt	8th pass	housewife	temporary	Low hemoglobin	no	1
213	march	voluntary	repeat	outdoor	46	male	married	urban	ludhiana	punjab	hindu	chander	Ad dharmi	B.A. pass	bussiness	permanent	Asthmatics, on steroids	yes	4
214	march	voluntary	1st time	outdoor	26	male	unmarried	urban	ludhiana	punjab	hindu	aggarwal	baniya	bio. Tec.	student	temporary	cough, fever	no	4
215	march	voluntary	1st time	outdoor	30	female	married	urban	ludhiana	punjab	hindu	kumari	Ravidasia	12th pass	labourer	temporary	recently delivered	no	3
216	march	voluntary	repeat	outdoor	56	male	married	urban	ludhiana	punjab	hindu	sharma	brahmin	M.A. pass	bussiness	temporary	blood donation interval < 3months	no	7
217	march	voluntary	1st time	outdoor	17	female	unmarried	urban	ludhiana	punjab	hindu	mehta	Teli	B.A. 1st year	student	temporary	underage , low weight	no	2,7
218	march	voluntary	repeat	outdoor	40	male	married	urban	ludhiana	punjab	sikh	singh	jatt	10th pass	bussiness	temporary	uncontrolled diabeteis millitus type 2 (326)	no	4
219	march	voluntary	repeat	outdoor	58	male	married	urban	ludhiana	punjab	hindu	gupta	baniya	B.E.	engineer	permanent	allergic to wheat, on medication	yes	4
220	march	voluntary	1st time	outdoor	47	male	married	urban	ludhiana	punjab	hindu	sharma	brahmin	10th pass	bussiness	temporary	cough, fever	no	4
221	march	voluntary	1st time	outdoor	19	male	unmarried	urban	ludhiana	punjab	hindu	gupta	baniya	B.Com 2nd yr	student	temporary	QNS	no	7
222	march	voluntary	1st time	outdoor	20	female	unmarried	urban	ludhiana	punjab	hindu	kapil	brahmin	fashion designing course	student	temporary	Low hemoglobin	no	1
223	march	voluntary	1st time	outdoor	21	female	unmarried	urban	ludhiana	punjab	sikh	kaur	Gujjar	Fashion designing course	student	temporary	Low hemoglobin	no	1
224	march	voluntary	1st time	outdoor	40	female	married	urban	ludhiana	punjab	sikh	kaur	jatt	12th pass	housewife	permanent	bipolar illness ,depression	yes	4
225	march	voluntary	1st time	outdoor	20	female	unmarried	urban	ludhiana	punjab	muslim	parveen	sunni	Fashion designing course	student	temporary	Low hemoglobin	no	1
226	march	voluntary	1st time	outdoor	24	female	unmarried	urban	ludhiana	punjab	sikh	kaur	chang	diploma in computor enginering	student	temporary	Low hemoglobin , low weight	no	1,2
227	march	voluntary	repeat	outdoor	21	male	unmarried	urban	ludhiana	punjab	hindu	malhotra	khatri	B.Com. 3rd yr	student	temporary	blood donation interval < 3months	no	7
228	march	voluntary	1st time	outdoor	19	male	unmarried	urban	ludhiana	punjab	hindu	mishra	brahmin	B.A. 1st year	student	temporary	cough, cold	no	4
229	march	voluntary	1st time	outdoor	23	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.A. 2nd year	student	temporary	steroid injection	no	4
230	april	replacement	repeat	indoor	31	male	unmarried	urban	ludhiana	punjab	hindu	kumar	mazhabi	M.A. pass	bussiness	temporary	fungal infection (tinea)	no	4
231	april	replacement	repeat	indoor	46	male	married	urban	ludhiana	punjab	hindu	kumar	chamar	B.A. pass	bussiness	self deferral	anxiety	no	4
232	april	voluntary	1st time	indoor	20	female	unmarried	urban	ludhiana	punjab	jain	jain	jain	B.Com 1st yr	student	temporary	Low hemoglobin	no	1
233	april	replacement	repeat	indoor	29	male	unmarried	urban	hoshiarpur	punjab	sikh	singh	kumhar	8th pass	bussiness	temporary	conjuctivitis , on antibiotics	yes	4
234	april	replacement	repeat	indoor	40	male	married	urban	ludhiana	punjab	sikh	singh	jatt	12th pass	farmer	self deferral	blood donation interval < 3months	no	7
235	april	voluntary	repeat	indoor	24	female	unmarried	rural	moga	punjab	sikh	kaur	mazhabi	12th pass	student	temporary	blood donation interval < 3months, conjuctivitis	yes	4, 7
236	april	replacement	1st time	indoor	22	male	unmarried	rural	ferozpur	punjab	hindu	kumar	Ramdasia	12th pass	bussiness	permanent	intravenous drug abuser	no	6
237	april	voluntary	repeat	indoor	39	female	married	urban	ludhiana	punjab	hindu	gupta	baniya	10th pass	bussiness	temporary	Low hemoglobin	no	1
238	april	voluntary	repeat	indoor	40	male	married	rural	hoshiarpur	punjab	hindu	chabra	arora	10th pass	driver	temporary	cough, fever	no	4
239	april	replacement	1st time	indoor	32	male	married	urban	ludhiana	punjab	sikh	singh	jatt	8th pass	service	temporary	cough, cold	no	4
240	april	voluntary	repeat	indoor	22	male	unmarried	urban	malerkotla	punjab	muslim	mohammad	shia	M.A. 1st yr	student	temporary	fungal infection (tinea)	no	4
241	april	voluntary	1st time	indoor	47	female	married	urban	ludhiana	punjab	hindu	arora	khatri	B.A. pass	housewife	permanent	osteoarthrities	no	4
242	april	voluntary	1st time	indoor	22	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.Com. 3rd yr	student	temporary	tattooing	no	6
243	april	voluntary	1st time	indoor	55	male	married	rural	sangrur	punjab	hindu	aggarwal	baniya	diploma in pharmacy	bussiness	permanent	hyperthyroidism	no	4
244	april	voluntary	1st time	indoor	50	female	married	urban	khanna	punjab	sikh	kaur	jatt	5th pass	housewife	temporary	Low hemoglobin	no	1
245	april	voluntary	1st time	indoor	20	female	unmarried	rural	ludhiana	punjab	hindu	rautela	rajput	B.Tec. 3rd yr	student	temporary	Low hemoglobin	no	1
246	april	replacement	1st time	indoor	32	female	married	urban	ludhiana	punjab	hindu	sharma	brahmin	12th pass	housewife	temporary	Low hemoglobin	no	1
247	april	voluntary	repeat	indoor	40	male	married	urban	ludhiana	punjab	sikh	singh	mazhabi	5th pass	bussiness	temporary	typhoid	no	4
248	april	voluntary	1st time	indoor	33	male	married	urban	ludhiana	punjab	hindu	kumar	balmiki	5th pass	bussiness	temporary	scabies skin disease	no	4
249	april	replacement	repeat	indoor	33	male	married	urban	ludhiana	punjab	hindu	kumar	mazhabi	M.Com. Pass	service	temporary	sore throat,on medication	yes	4
250	april	voluntary	repeat	indoor	39	male	married	urban	ludhiana	punjab	sikh	ramgarhia	jatt	4th pass	bussiness	temporary	blood donation interval < 3months	no	7
251	april	voluntary	repeat	indoor	39	male	married	urban	ludhiana	punjab	sikh	singh	jatt	B.Pharmacy	bussiness	temporary	tetanus toxoid vaccination	no	4
252	april	voluntary	1st time	indoor	21	male	unmarried	urban	ludhiana	punjab	hindu	kumar	balmiki	B.A. 2nd year	student	temporary	cough, fever	no	4
253	april	voluntary	repeat	indoor	39	male	married	urban	ludhiana	punjab	sikh	singh	Soi	8th pass	labourer	temporary	tetanus toxoid vaccination	no	4
254	april	voluntary	repeat	indoor	18	male	unmarried	urban	ludhiana	punjab	hindu	gambhir	khatri	BBA 1st yr	student	temporary	dog bite	no	4
255	april	voluntary	1st time	indoor	30	male	unmarried	urban	ludhiana	punjab	sikh	singh	kumhar	10th pass	bussiness	temporary	steroid injection	yes	4
256	april	voluntary	repeat	indoor	39	female	married	rural	ludhiana	punjab	sikh	kaur	Lohar	6th pass	driver	temporary	allergic skin disease	no	4
257	april	voluntary	repeat	indoor	28	female	married	rural	ludhiana	punjab	sikh	kaur	jatt	10th pass	Housewife	Temporary	Low hemoglobin , 2nd day of mensturation	no	1,3
258	may	voluntary	repeat	indoor	46	male	married	urban	ludhiana	punjab	jain	jain	jain	LLB	bussiness	permanent	hyperthyroidism, on thyromycin	yes	4
259	may	voluntary	repeat	indoor	28	male	unmarried	urban	ludhiana	punjab	hindu	pal	khatri	B.A. pass	bussiness	temporary	low weight	no	2
260	may	replacement	repeat	indoor	23	male	unmarried	urban	ludhiana	punjab	hindu	kumar	chamar	12th pass	service	temporary	dog bite	no	4
261	may	replacement	1st time	indoor	49	male	married	urban	ludhiana	punjab	sikh	singh	kumhar	12th pass	bussiness	permanent	stroke	no	4
262	may	replacement	repeat	indoor	24	male	unmarried	urban	ludhiana	punjab	jain	jain	jain	B.Com. 3rd yr	student	temporary	dog bite	no	4
263	may	replacement	repeat	indoor	30	male	married	urban	ludhiana	punjab	sikh	sadioura	jatt	MBA	NRI	temporary	tattooing	no	6
264	may	voluntary	1st time	indoor	28	female	married	urban	ambala	haryana	hindu	sharma	brahmin	B.A. pass	bussiness	temporary	low hemoglobin , breastfeeding	no	1,3
265	may	replacement	repeat	indoor	25	male	married	urban	moga	punjab	hindu	chabra	khatri	12th pass	bussiness	temporary	vein not found	no	7
266	may	voluntary	repeat	indoor	41	male	married	urban	ludhiana	punjab	sikh	singh	jatt	12th pass	bussiness	permanent	hyperthyroidism	no	4
267	may	voluntary	repeat	indoor	24	male	unmarried	urban	ludhiana	punjab	sikh	singh	Ravidasia	12th pass	service	temporary	low weight	no	2
268	may	voluntary	repeat	indoor	43	male	married	urban	ludhiana	punjab	hindu	khanna	khatri	10th pass	driver	temporary	Low hemoglobin	no	1
269	may	replacement	repeat	indoor	31	male	married	rural	ludhiana	punjab	sikh	singh	mazhabi	12th pass	service	temporary	fungal infection (tinea)	no	4
270	may	voluntary	repeat	indoor	52	male	married	urban	ferozpur	punjab	sikh	singh	khatri	B.Sc. Pass	bussiness	temporary	DNS surgery	no	5
271	may	replacement	repeat	indoor	21	female	unmarried	rural	sangrur	punjab	sikh	kaur	jatt	B.Sc Nursing 4th year	student	temporary	Low hemoglobin	no	1
272	may	voluntary	repeat	indoor	24	male	unmarried	urban	ludhiana	punjab	sikh	singh	chang	5th pass	bussiness	permanent	intravenous drug abuser	no	6
273	may	voluntary	1st time	indoor	33	male	married	rural	mohali	punjab	hindu	pal	khatri	PG in Computer application	bussiness	temporary	allergic skin disease	no	4
274	may	voluntary	1st time	indoor	25	female	unmarried	urban	ludhiana	punjab	hindu	rani	khatri	12th pass	service	temporary	Low hemoglobin	no	1
275	may	voluntary	1st time	indoor	30	male	married	rural	hoshiarpur	punjab	sikh	singh	jatt	M.Tec.	service	self deferral	hodgkin lymphoma,on chemotherapy	yes	4
276	may	voluntary	1st time	indoor	30	female	married	urban	jammu	jammu and kashmir	hindu	kotwal	rajput	M.Phil, B.Ed.	service	temporary	abortion, allergic skin disease	no	3,4
277	may	voluntary	1st time	outdoor	23	male	unmarried	urban	ludhiana	punjab	hindu	rawat	rajput	M.A. 2nd yr	student	temporary	tattooing	no	6
278	may	voluntary	1st time	outdoor	21	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.Com pass	student	temporary	tattooing	no	6
279	may	voluntary	repeat	outdoor	24	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	Farmer	Temporary	blood donation interval < 3months	no	7
280	may	Voluntary	Repeat	Outdoor	32	male	married	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	Farmer	temporary	blood donation interval < 3months	no	7
281	june	voluntary	1st time	indoor	57	male	married	urban	ludhiana	punjab	sikh	singh	jatt	10th pass	bussiness	temporary	knee replacement surgery	no	5
282	june	voluntary	1st time	indoor	30	male	married	rural	bathinda	punjab	sikh	singh	Soi	12th pass	bussiness	self deferral	migrane, on medication	yes	4
283	june	voluntary	1st time	indoor	36	female	married	rural	moga	punjab	sikh	kaur	jatt	M.A. pass	housewife	permanent	Hepatitis C Virus	no	6
284	june	voluntary	repeat	indoor	26	female	married	urban	ludhiana	punjab	hindu	arora	khatri	10th pass	housewife	temporary	pregnancy	no	7
285	june	replacement	repeat	indoor	26	male	unmarried	rural	ludhiana	punjab	sikh	singh	chang	12th pass	driver	temporary	allergic skin disease	no	4
286	june	voluntary	1st time	indoor	21	female	unmarried	rural	jalandhar	punjab	sikh	singh	jatt	diploma in pharmacy	bussiness	temporary	typhoid	no	4
287	june	replacement	1st time	indoor	19	male	married	urban	ludhiana	punjab	sikh	grover	arora	12th pass	student	self deferral	anxiety	no	4
288	june	replacement	repeat	indoor	31	male	married	rural	jalandhar	punjab	hindu	sharma	brahmin	B.A. pass	bussiness	permanent	psoriasis	no	4
289	june	voluntary	1st time	indoor	36	male	married	urban	ferozpur	punjab	hindu	yadav	Ramgarhia	5th pass	labourer	temporary	allergic skin disease, on antibiotics	yes	4
290	june	voluntary	repeat	indoor	26	female	unmarried	urban	ludhiana	punjab	hindu	arora	khatri	BBA	service	temporary	Low hemoglobin	no	1
291	june	voluntary	repeat	indoor	27	male	married	urban	muktsar sahib	punjab	sikh	singh	chang	B.A. pass	bussiness	temporary	blood donation interval < 3months	no	7
292	june	voluntary	repeat	indoor	30	male	married	rural	jalandhar	punjab	hindu	kumar	balmiki	10th pass	labourer	temporary	fracture forearm	no	5
293	june	voluntary	1st time	indoor	42	male	married	rural	ludhiana	punjab	sikh	singh	jatt	5th pass	farmer	temporary	Low hemoglobin	no	1
294	june	voluntary	repeat	indoor	49	female	married	urban	ludhiana	punjab	sikh	kaur	jatt	12th pass	housewife	temporary	Low hemoglobin	no	1
295	june	voluntary	1st time	indoor	21	male	unmarried	urban	ludhiana	punjab	hindu	pasi	Ramgarhia	B.A. 2nd year	student	temporary	pulmonary tuberculosis, on medication, low weight	yes	2,4
296	june	voluntary	repeat	indoor	48	female	married	urban	ludhiana	punjab	sikh	kaur	jatt	B.A. pass	housewife	temporary	Low hemoglobin	no	1
297	june	voluntary	repeat	indoor	50	female	married	urban	ludhiana	punjab	sikh	insa	Dhobi	12th pass	housewife	temporary	Low hemoglobin	no	1
298	june	voluntary	1st time	outdoor	45	female	married	rural	ludhiana	punjab	sikh	kaur	jatt	10th pass	housewife	temporary	2nd day of mensturation	no	3
299	june	voluntary	repeat	outdoor	20	male	unmarried	urban	ludhiana	punjab	hindu	prasad	brahmin	B.Com 1st yr	student	temporary	vein not found	no	7
300	june	voluntary	repeat	outdoor	40	female	married	rural	ludhiana	punjab	sikh	kaur	arora	12th pass	bussiness	temporary	Low hemoglobin	no	1
301	june	voluntary	1st time	outdoor	38	female	married	urban	ludhiana	punjab	sikh	kaur	jatt	B.A. pass	housewife	temporary	Low hemoglobin	no	1

S.no.	Date	Type of Donation	1st/ Repeat	indoor/ outdoor	Age	Gender	Marital status	locality	city	state	Religion	surname	caste	Education	Occupation	Deferral type	Cause	medication	category
302	june	voluntary	repeat	outdoor	26	male	married	urban	ludhiana	punjab	hindu	kohli	khatri	B.Com pass	service	temporary	maleria	no	4
303	june	voluntary	repeat	outdoor	45	female	married	rural	ludhiana	punjab	sikh	kaur	Dhobi	12th pass	housewife	temporary	Low hemoglobin	no	1
304	june	voluntary	1st time	outdoor	33	male	married	urban	ludhiana	punjab	hindu	kumar	chamar	B.A. pass	bussiness	temporary	tattooing	no	6
305	june	voluntary	1st time	outdoor	29	male	married	rural	ludhiana	punjab	muslim	ansari	sunni	B.Sc. Pass	service	temporary	laproscopic cholecysectomy surgery	no	5
306	june	voluntary	1st time	outdoor	36	male	married	rural	ludhiana	punjab	sikh	singh	Ramdasia	10th pass	driver	temporary	anxiety	no	4
307	june	voluntary	1st time	outdoor	27	male	unmarried	urban	ludhiana	punjab	hindu	garg	baniya	B.A. pass	bussiness	temporary	low weight	no	2
308	june	voluntary	repeat	outdoor	31	male	married	urban	ludhiana	punjab	hindu	palta	chamar	B.Com pass	service	temporary	tattooing	no	6
309	june	voluntary	repeat	outdoor	38	female	married	urban	ludhiana	punjab	sikh	singh	jatt	M.A.,B.Ed.	service	temporary	Low hemoglobin	no	1
310	july	replacement	repeat	indoor	35	male	married	urban	ludhiana	punjab	sikh	takkar	jatt	12th pass	bussiness	permanent	hypertension	no	4
311	july	voluntary	1st time	indoor	19	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.A. 1st year	student	temporary	Low hemoglobin	no	1
312	july	voluntary	1st time	indoor	24	female	married	urban	surainkot	Jammu and kashmir	muslim	mohammad	shia	12th pass	housewife	temporary	2nd day of mensturation	no	3
313	july	replacement	repeat	indoor	26	male	unmarried	urban	ludhiana	punjab	hindu	pal	Ad dharmi	B.A. pass	service	temporary	fungal infection (tinea)	no	4
314	july	voluntary	1st time	indoor	23	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Pharmacy	student	permanent	Hepatitis C Virus	no	6
315	july	replacement	repeat	indoor	23	male	unmarried	urban	ludhiana	punjab	hindu	sahini	mazhabi	12th pass	service	temporary	blood donation interval < 3months	no	7
316	july	voluntary	1st time	indoor	25	female	unmarried	rural	ludhiana	punjab	sikh	kaur	jatt	B.Sc. Nursing	service	temporary	Low hemoglobin	no	1
317	july	replacement	1st time	indoor	22	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.A. pass	farmer	temporary	steroid injection	yes	4
318	july	voluntary	repeat	indoor	32	male	married	urban	ludhiana	punjab	hindu	kumar	Ramdasia	B.Pharmacy	service	temporary	fungal infection ,on itraconazole	yes	4
319	july	voluntary	1st time	indoor	30	female	married	urban	ludhiana	punjab	hindu	kumar	balmiki	B.A. pass	housewife	temporary	antibiotics	no	4
320	july	replacement	1st time	indoor	42	male	married	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	farmer	self deferral	on deaddiction therapy	yes	6
321	july	replacement	1st time	indoor	34	male	married	rural	khanna	punjab	sikh	singh	jatt	10th pass	bussiness	temporary	antibiotics	yes	4
322	july	voluntary	1st time	indoor	57	female	married	rural	bathinda	punjab	sikh	kaur	jatt	12th pass	housewife	permanent	rheumatoid artheritis	no	4
323	july	voluntary	repeat	indoor	55	female	married	rural	barnala	punjab	sikh	kaur	jatt	8th pass	housewife	permanent	Hypothyroidism	no	4
324	july	voluntary	1st time	indoor	25	female	unmarried	rural	barnala	punjab	sikh	kaur	jatt	B.Sc. Nursing	service	temporary	Low hemoglobin	no	1
325	july	voluntary	1st time	indoor	36	male	married	urban	ludhiana	punjab	hindu	kumar	Ravidasia	diploma in interior designing	bussiness	temporary	acne vulgaris	no	4
326	july	voluntary	1st time	indoor	24	male	unmarried	rural	moga	punjab	sikh	singh	jatt	M.A.,B.Ed.	service	temporary	blood donation interval < 3months	no	7
327	july	voluntary	1st time	indoor	38	female	married	rural	patiala	punjab	sikh	kaur	jatt	10th pass	housewife	permanent	Hypothyroidism	no	4
328	july	voluntary	repeat	indoor	38	female	married	urban	sangrur	punjab	sikh	kaur	jatt	B.A. pass	housewife	self deferral	uncontrolled diabeteis millitus type 2 (333)	no	4
329	july	voluntary	1st time	indoor	27	male	unmarried	rural	ludhiana	punjab	hindu	kumar	chamar	12th pass	service	permanent	Epilepsy	no	4
330	july	voluntary	repeat	indoor	21	female	unmarried	urban	ludhiana	punjab	hindu	malik	jatt	B.Tec.2nd yr	student	temporary	Low hemoglobin	no	1
331	july	replacement	1st time	indoor	28	male	unmarried	rural	kotakpura	punjab	hindu	kumar	arora	B.Com pass	bussiness	temporary	hemorroidectomy surgery	no	5
332	july	voluntary	1st time	outdoor	42	female	married	urban	ludhiana	punjab	hindu	kumari	mazhabi	B.Sc. Pass	service	temporary	Low hemoglobin	no	1
333	july	voluntary	1st time	outdoor	53	female	married	urban	ludhiana	punjab	hindu	sharma	brahmin	B.A. pass	housewife	permanent	valvular heart disease	no	4
334	july	voluntary	1st time	outdoor	42	female	married	urban	ludhiana	punjab	hindu	shukla	brahmin	M.A. pass	housewife	permanent	Hypothyroidism	no	4
335	august	replacement	1st time	indoor	37	male	married	urban	nawansha hr	punjab	hindu	kumar	chamar	B.A. pass	bussiness	permanent	Hepatitis B Virus	no	6
336	august	voluntary	repeat	indoor	29	male	unmarried	urban	ludhiana	punjab	hindu	kumar	arora	8th pass	bussiness	temporary	blood donation interval < 3months	no	7
337	august	voluntary	repeat	indoor	40	male	married	rural	kapurthala	punjab	hindu	chawala	khatri	12th pass	bussiness	permanent	Hypothyroidism	no	4
338	august	voluntary	repeat	indoor	22	male	unmarried	urban	ludhiana	punjab	hindu	kumar	balmiki	B.A. pass	bussiness	temporary	tattooing	no	6
339	august	voluntary	repeat	indoor	45	male	married	urban	ludhiana	punjab	hindu	kumar	balmiki	12th pass	bussiness	temporary	uncontrolled diabeteis mellitus type 2 (390)	no	4
340	august	voluntary	repeat	indoor	51	female	married	rural	ludhiana	punjab	sikh	kaur	Ramdasia	5th pass	labourer	temporary	Low hemoglobin	no	1
341	august	voluntary	1st time	indoor	38	female	married	rural	ludhiana	punjab	sikh	kaur	chamar	8th pass	housewife	temporary	Low hemoglobin	no	1
342	august	voluntary	1st time	indoor	48	female	married	rural	ludhiana	punjab	sikh	kaur	arora	10th pass	housewife	temporary	Low hemoglobin	no	1
343	august	voluntary	repeat	indoor	39	male	married	rural	ludhiana	punjab	sikh	sethi	jatt	12th pass	driver	temporary	vein not found	no	7
344	august	replacement	1st time	indoor	28	male	married	urban	ludhiana	punjab	sikh	singh	jatt	12th pass	bussiness	temporary	vein not found	no	7
345	august	replacement	1st time	indoor	38	male	married	rural	jammu	Jammu and kashmir	hindu	sharma	brahmin	B.Com pass	service	temporary	allergic skin disease, on medication	yes	4
346	august	replacement	1st time	indoor	26	male	unmarried	urban	ludhiana	punjab	hindu	khanna	khatri	B.Tec.	engineer	temporary	fever	no	4
347	august	voluntary	1st time	indoor	44	female	married	urban	ludhiana	punjab	Sikh	malhan	jatt	12th pass	bussiness	temporary	vitiligo, on medication	yes	4
348	august	voluntary	1st time	outdoor	19	female	unmarried	urban	ludhiana	punjab	hindu	gupta	baniya	B.Com 1st yr	student	temporary	acne vulgaris , on medication	yes	4
349	august	voluntary	1st time	outdoor	17	male	unmarried	urban	ludhiana	punjab	hindu	kumar	arora	12th	student	temporary	underage, low weight	no	2,7
350	august	voluntary	repeat	outdoor	44	male	married	rural	ferozpur	punjab	sikh	singh	Nai	12th pass	labourer	temporary	tetanus toxoid vaccination	no	4
351	august	voluntary	1st time	outdoor	20	male	unmarried	rural	ferozpur	punjab	hindu	wadhwa	arora	B.A. pass	bussiness	temporary	antibiotics	yes	4
352	august	voluntary	1st time	outdoor	40	female	married	rural	jalandhar	punjab	sikh	rai	rajput	12th pass	housewife	temporary	Low hemoglobin	no	1
353	august	voluntary	repeat	outdoor	30	male	unmarried	urban	jalandhar	punjab	hindu	kumar	Ramdasia	10th pass	labourer	temporary	Low hemoglobin	no	1
354	august	voluntary	1st time	outdoor	24	male	unmarried	urban	jalandhar	punjab	sikh	singh	mazhabi	12th pass	labourer	Temporary	Low hemoglobin	no	1
355	september	voluntary	repeat	indoor	26	male	unmarried	urban	ludhiana	punjab	hindu	gupta	baniya	M.A. pass	service	temporary	blood donation interval < 3months	no	7
356	september	replacement	repeat	indoor	42	male	married	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Com pass	service	temporary	typhoid	no	4
357	september	voluntary	repeat	indoor	42	male	married	urban	kotakpura	punjab	hindu	kumar	chamar	12th pass	bussiness	permanent	hypertension	no	4
358	september	replacement	repeat	indoor	42	male	married	urban	kotakpura	punjab	sikh	singh	jatt	12th pass	Farmer	permanent	intravenous drug abuser	no	6
359	september	replacement	repeat	indoor	33	male	married	rural	jalandhar	punjab	sikh	singh	arora	B.A. pass	bussiness	temporary	kidney stone surgery	no	5
360	september	voluntary	repeat	indoor	49	male	married	urban	jammu	jammu and kashmir	sikh	sandhu	jatt	B.Com, B.Ed.	service	permanent	Hypothyroidism	no	4
361	september	voluntary	1st time	indoor	45	male	married	urban	pathankot	punjab	hindu	chander	Ad dharmi	B.Sc. Pass	service	permanent	deep vein thrombosis	no	4
362	september	replacement	repeat	indoor	43	male	married	urban	jalandhar	punjab	sikh	singh	jatt	B.Com pass	bussiness	temporary	sinusitis, on antibiotics	yes	4
363	september	voluntary	1st time	indoor	50	male	married	rural	mohali	punjab	hindu	pal	Ad dharmi	M.Com. Pass	service	permanent	kidney transplant donor, low hemoglobin	yes	1,5
364	september	voluntary	1st time	indoor	28	female	unmarried	urban	ludhiana	punjab	hindu	juneja	arora	B.Com, B.Ed.	service	temporary	Low hemoglobin	no	1
365	september	replacement	repeat	indoor	28	male	unmarried	urban	kangra	himachal pradesh	hindu	garg	baniya	B.Pharmacy	bussiness	temporary	blood donation interval < 3months	no	7
366	september	replacement	repeat	indoor	38	male	married	urban	ludhiana	punjab	hindu	kumar	Ravidasia	B.A. pass	service	permanent	hyperthyroidism	no	4
367	september	replacement	repeat	indoor	47	male	married	urban	ludhiana	punjab	hindu	kumar	Gujjar	12th pass	bussiness	temporary	kidney stone surgery	no	5
368	september	voluntary	repeat	outdoor	48	male	married	urban	ludhiana	punjab	hindu	kumar	chamar	B.A. pass	bussiness	permanent	coronary artery disease	no	4
369	september	voluntary	repeat	outdoor	21	male	unmarried	urban	ludhiana	punjab	sikh	singh	Soi	B.A. pass	service	temporary	tattooing	no	6
370	september	voluntary	repeat	outdoor	38	male	married	urban	ludhiana	punjab	jain	jain	jain	M.Com. Pass	bussiness	self deferral	post covid-19	no	8
371	september	voluntary	repeat	outdoor	38	male	married	urban	ludhiana	punjab	jain	jain	jain	B.Com pass	bussiness	permanent	hypertension	no	4
372	september	voluntary	1st time	outdoor	28	male	unmarried	urban	ludhiana	punjab	Jain	jain	jain	B.A. pass	bussiness	temporary	typhoid	no	4
373	september	voluntary	repeat	outdoor	38	male	married	urban	ludhiana	punjab	hindu	singla	baniya	B.Com pass	bussiness	permanent	hypertension	no	4
374	september	voluntary	1st time	outdoor	29	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	Farmer	temporary	tattooing	no	6
375	september	voluntary	repeat	outdoor	28	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	M.A.,B.Ed.	service	temporary	vein not found	no	7
376	september	voluntary	repeat	outdoor	21	male	unmarried	urban	ludhiana	punjab	sikh	singh	Lohar	B.Com. 3rd yr	student	temporary	fever	no	4
377	september	voluntary	1st time	outdoor	29	male	unmarried	rural	ludhiana	punjab	sikh	singh	Jatt	B.Sc. Pass	bussiness	temporary	antibiotics	yes	4
378	september	replacement	repeat	indoor	32	male	married	urban	jalandhar	punjab	hindu	kumar	Ramdasia	M.A. pass	service	temporary	tattooing, appendecectomy surgery	no	5,6
379	october	voluntary	1st time	indoor	27	male	married	urban	ludhiana	punjab	sikh	singh	mehra	12th pass	bussiness	temporary	QNS	no	7
380	october	voluntary	1st time	indoor	40	female	married	urban	mohali	punjab	sikh	singh	arora	12th pass	housewife	temporary	dengue	no	4
381	october	replacement	1st time	indoor	30	male	married	urban	ludhiana	punjab	hindu	prasad	brahmin	12th pass	bussiness	temporary	allergic skin disease	no	4
382	october	voluntary	1st time	indoor	20	male	unmarried	urban	ludhiana	punjab	hindu	grover	khatri	B.Com. 3rd yr	student	temporary	dengue	no	4
383	october	voluntary	1st time	indoor	31	male	unmarried	urban	ludhiana	punjab	hindu	mahajan	baniya	B.Tec.	engineer	temporary	dengue	no	4
384	october	replacement	1st time	indoor	28	male	unmarried	rural	jammu	jammu and kashmir	hindu	choudhury	brahmin	B.Tec.	engineer	temporary	Low hemoglobin	no	1
385	october	voluntary	repeat	indoor	21	male	unmarried	rural	ludhiana	punjab	hindu	pal	khatri	B.Pharmacy	student	temporary	tattooing	no	6
386	october	voluntary	1st time	indoor	30	male	married	urban	ludhiana	punjab	hindu	kumar	chamar	B.A. pass	service	temporary	typhoid	no	4
387	october	replacement	repeat	indoor	32	male	married	urban	ludhiana	punjab	sikh	singh	jatt	B.Sc. Pass	service	temporary	tattooing, low hemoglobin	no	1,6
388	october	voluntary	repeat	indoor	19	male	unmarried	urban	ludhiana	punjab	sikh	singh	arora	B.Com 1st yr	student	temporary	blood donation interval < 3months	no	7
389	october	voluntary	repeat	indoor	38	male	married	urban	pathankot	punjab	hindu	mahajan	baniya	PG in E. waste management	service	temporary	dental procedure, on amoxicillin	yes	4,5
390	october	voluntary	1st time	indoor	23	male	unmarried	rural	hoshiarpur	punjab	hindu	dass	Ad dharmi	hotel management course	labourer	temporary	low weight	no	2
391	october	replacement	repeat	indoor	28	male	married	rural	jalandhar	punjab	hindu	kumar	khatri	12th pass	bussiness	temporary	blood donation interval < 3months	no	7
392	october	replacement	repeat	indoor	39	male	married	rural	jalandhar	punjab	hindu	kumar	khatri	10th pass	bussiness	temporary	allergic skin disease	no	4
393	october	replacement	repeat	indoor	28	male	married	rural	ludhiana	punjab	sikh	singh	Ravidasia	10th pass	labourer	temporary	allergic skin disease	no	4
394	october	voluntary	1st time	indoor	25	male	unmarried	urban	jalandhar	punjab	sikh	singh	rajput	12th pass	bussiness	temporary	Low hemoglobin	no	1
395	october	replacement	repeat	indoor	48	male	married	urban	ludhiana	punjab	hindu	kohli	khatri	B.Com, B.Ed.	service	temporary	vein not found	no	7
396	october	replacement	1st time	indoor	35	male	married	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	farmer	permanent	coronary artery disease	no	4
397	october	voluntary	1st time	indoor	20	female	unmarried	urban	ludhiana	punjab	hindu	saini	Dhobi	communication design course 3rd yr	student	temporary	1st day of mensturation	no	3
398	october	voluntary	1st time	indoor	29	male	unmarried	urban	jammu	jammu and kashmir	hindu	sharma	brahmin	B.Tec.	engineer	temporary	post covid-19	no	8
399	october	voluntary	1st time	indoor	28	male	unmarried	urban	ludhiana	punjab	hindu	halwai	baniya	8th pass	labourer	temporary	typhoid	no	4

S.no.	Date	Type of Donation	1st/ Repeat	indoor/ outdoor	Age	Gender	Marital status	locality	city	state	Religion	surname	caste	Education	Occupation	Deferral type	Cause	medication	category
400	october	replacement	repeat	indoor	39	male	married	rural	mansa	punjab	hindu	garg	baniya	10th pass	labourer	permanent	brain aneurysm, on medication	yes	4
401	october	voluntary	1st time	indoor	21	male	unmarried	rural	moga	punjab	sikh	singh	jatt	B.A. 2nd year	student	temporary	post covid-19	no	8
402	october	replacement	repeat	indoor	25	male	married	rural	bathinda	punjab	sikh	singh	mazhabi	B.Sc. MLT	service	temporary	abdominal tuberculosis	no	4
403	october	replacement	repeat	indoor	34	male	married	rural	jalandhar	punjab	sikh	singh	mazhabi	B.Com pass	service	temporary	low weight	no	2
404	october	replacement	repeat	indoor	50	male	married	urban	patiala	punjab	hindu	garg	baniya	B.A. pass	bussiness	temporary	dog bite	no	4
405	october	replacement	1st time	indoor	19	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.A. 2nd year	student	temporary	Low hemoglobin	no	1
406	october	replacement	repeat	indoor	42	male	married	urban	ludhiana	punjab	hindu	sharma	brahmin	MBA	service	temporary	laproscopic cholecysectomy surgery	no	5
407	october	voluntary	1st time	outdoor	67	male	married	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	farmer	permanent	overage	no	7
408	october	voluntary	1st time	outdoor	25	male	unmarried	urban	ludhiana	punjab	hindu	mishra	brahmin	M.A. 2nd yr	student	permanent	asthmatic attacks, on steroids	yes	4
409	november	replacement	1st time	indoor	45	male	married	rural	ferozpur	punjab	sikh	singh	jatt	12th pass	farmer	temporary	dog bite	no	4
410	november	replacement	1st time	indoor	21	male	unmarried	rural	jalandhar	punjab	hindu	kumar	chamar	B.A. 2nd year	student	temporary	tattooing	no	6
411	november	replacement	1st time	indoor	38	male	married	rural	sirsa	haryana	sikh	singh	jatt	12th pass	farmer	permanent	epilepsy	no	4
412	november	voluntary	1st time	indoor	22	male	married	urban	ludhiana	punjab	sikh	singh	rajput	B.A. pass	bussiness	temporary	dengue	no	4
413	november	voluntary	repeat	indoor	36	male	married	urban	ludhiana	punjab	sikh	singh	mazhabi	M.A. pass	service	permanent	hypertension	no	4
414	november	replacement	repeat	indoor	32	male	married	urban	ludhiana	punjab	hindu	kumar	chamar	BBA	service	temporary	sore throat, on antibiotics	yes	4
415	november	replacement	1st time	indoor	50	male	married	urban	jammu	jammu and kashmir	sikh	singh	arora	B.Pharmacy	bussiness	temporary	uncontrolled diabeteis mellitus type 2 (380)	no	4
416	november	replacement	1st time	indoor	26	male	unmarried	rural	mansa	punjab	sikh	singh	jatt	12th pass	farmer	temporary	fungal infection (tinea)	no	4
417	november	voluntary	repeat	indoor	32	male	married	urban	ludhiana	punjab	hindu	pal	khatri	B.A. pass	bussiness	temporary	QNS	no	7
418	november	voluntary	repeat	indoor	23	female	unmarried	urban	patiala	punjab	sikh	kaur	jatt	MBBS final prof	student	temporary	dengue	no	4
419	november	voluntary	repeat	indoor	30	male	unmarried	urban	ludhiana	punjab	sikh	garewal	jatt	B.A. pass	farmer	self deferral	cough, cold	no	4
420	november	voluntary	repeat	indoor	51	male	married	urban	ludhiana	punjab	hindu	kumar	brahmin	12th pass	bussiness	temporary	vein not found	no	7
421	november	replacement	1st time	indoor	35	male	married	urban	udhampur	jammu and kashmir	hindu	patyal	Teli	B.Com pass	service	self deferral	anxiety	no	4
422	november	replacement	1st time	indoor	26	male	unmarried	urban	ludhiana	punjab	hindu	giri	Teli	12th pass	labourer	permanent	intravenous drug abuser	no	6
423	november	replacement	repeat	indoor	52	male	married	rural	kapurthala	punjab	sikh	singh	jatt	BBA	bussiness	temporary	uncontrolled diabeteis mellitus type 2 (380)	no	4
424	november	replacement	1st time	indoor	37	male	married	urban	jammu	jammu and kashmir	hindu	sharma	brahmin	B.Tec.	engineer	temporary	femur fracture fixation surgery	no	5
425	november	replacement	1st time	indoor	36	male	married	rural	ludhiana	punjab	sikh	singh	Ravidasia	B.Com pass	service	temporary	sore throat, on antibiotics	yes	4
426	november	voluntary	repeat	indoor	24	male	unmarried	urban	ludhiana	punjab	hindu	kumar	brahmin	B.Sc. Nursing	student	temporary	tattooing	no	6
427	november	replacement	repeat	indoor	29	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Sc. Pass	service	temporary	Asthmatics, on steroids	yes	4
428	november	replacement	1st time	indoor	35	male	married	urban	ludhiana	punjab	sikh	singh	jatt	10th pass	Farmer	temporary	kidney stone surgery	no	5
429	november	replacement	1st time	indoor	33	male	married	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	Farmer	temporary	sore throat, on antibiotics	yes	4
430	november	replacement	repeat	indoor	30	male	married	rural	sangrur	punjab	muslim	parveen	sunni	12th pass	bussiness	temporary	ligament surgery	no	5
431	november	replacement	repeat	indoor	53	male	married	urban	ludhiana	punjab	sikh	kaur	arora	B.A. pass	bussiness	temporary	dengue	no	4
432	november	voluntary	1st time	indoor	17	male	unmarried	urban	jalandhar	punjab	hindu	sehgal	khatri	B.Com 1st yr	student	temporary	underage, low weight	no	2,7
433	november	voluntary	1st time	indoor	38	male	married	urban	ludhiana	punjab	hindu	chabra	khatri	B.A. pass	service	temporary	NSAIDS	yes	4
434	november	Voluntary	1st time	indoor	34	male	married	urban	ludhiana	punjab	sikh	singh	mazhabi	10th pass	labourer	temporary	sore throat, on antibiotics	yes	4
435	november	voluntary	1st time	indoor	30	male	married	urban	ludhiana	punjab	sikh	singh	chamar	10th pass	labourer	temporary	dog bite	no	4
436	november	replacement	repeat	indoor	27	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Com pass	service	temporary	gastroentrirtis, on antibiotics	yes	4
437	november	replacement	1st time	indoor	30	male	unmarried	urban	ludhiana	punjab	hindu	kumar	khatri	BCA	bussiness	temporary	dengue	no	4
438	november	replacement	repeat	indoor	30	male	unmarried	urban	ludhiana	punjab	sikh	singh	arora	B.Sc. Pass	service	temporary	vein not found	no	7
439	november	replacement	1st time	indoor	40	male	married	rural	muktsar sahib	punjab	sikh	singh	jatt	B.A. pass	Farmer	self deferral	post covid-19	no	8
440	november	voluntary	1st time	indoor	27	male	married	rural	moga	punjab	sikh	gill	jatt	8th pass	NRI	temporary	alcohol consumption	no	4
441	november	replacement	repeat	indoor	38	male	married	rural	bathinda	punjab	sikh	singh	mazhabi	B.Sc. MLT	service	temporary	vein not found	no	7
442	november	voluntary	1st time	indoor	24	male	unmarried	urban	sangrur	punjab	hindu	jindal	baniya	B.Tec.	bussiness	temporary	allergic skin disease, on isotretinoin	yes	4
443	november	voluntary	1st time	indoor	40	female	married	urban	ferozpur	punjab	hindu	kumari	Ad dharmi	M.A. pass	service	temporary	Low hemoglobin , thalessemia trait	no	1,4
444	november	voluntary	1st time	indoor	34	female	married	urban	ludhiana	punjab	hindu	gupta	baniya	B.Com pass	housewife	temporary	Low hemoglobin	no	1
445	november	replacement	repeat	indoor	24	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	12th pass	Farmer	temporary	blood donation interval < 3months	no	7
446	november	voluntary	1st time	indoor	45	male	married	rural	ludhiana	punjab	sikh	singh	jatt	10th pass	Farmer	temporary	pulmonary tuberculosis	no	4
447	november	replacement	1st time	indoor	32	male	married	urban	faridkot	punjab	sikh	singh	arora	MBBS	doctor	temporary	road side accident, h/o surgery	no	5
448	november	replacement	repeat	indoor	33	male	married	rural	ferozpur	punjab	sikh	singh	jatt	BBA	bussiness	temporary	laproscopic appendectomy surgery	no	5
449	november	replacement	1st time	indoor	20	male	unmarried	rural	moga	punjab	sikh	singh	jatt	12th	student	temporary	tattooing	no	6
450	november	voluntary	1st time	indoor	31	male	married	urban	ludhiana	punjab	sikh	singh	chang	12th pass	service	permanent	polycythemia vera	no	4
451	november	voluntary	repeat	indoor	43	male	married	urban	ludhiana	punjab	hindu	kumar	Ramdasia	B.Pharmacy	bussiness	temporary	tattooing	no	6
452	november	replacement	repeat	indoor	54	male	married	urban	ludhiana	punjab	hindu	mahajan	baniya	BCA	bussiness	permanent	Hypothyroidism, on thyroxine	yes	4
453	november	replacement	repeat	indoor	40	male	married	rural	sangrur	punjab	muslim	khan	sunni	12th pass	Farmer	temporary	QNS	no	7
454	november	voluntary	1st time	indoor	20	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.Com 1st yr	student	self deferral	hypotension	no	4
455	november	replacement	1st time	indoor	25	male	unmarried	rural	moga	Punjab	Sikh	singh	rajput	M.Com. 3rd yr	student	temporary	spine surgery	no	5
456	november	voluntary	1st time	indoor	28	male	unmarried	urban	ludhiana	punjab	hindu	kumar	balmiki	B.Com, B.Ed.	service	temporary	vein not found	no	7
457	november	replacement	repeat	indoor	35	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	M.A.,B.Ed.	service	permanent	coronary artery disease	no	4
458	november	voluntary	1st time	outdoor	23	female	unmarried	urban	ludhiana	punjab	hindu	kaur	jatt	M.A. 2nd yr	student	permanent	hypertension	no	4
459	november	voluntary	1st time	outdoor	37	female	married	urban	ludhiana	punjab	hindu	devi	Ad dharmi	B.Sc. Nursing	service	temporary	Low hemoglobin	no	1
460	november	voluntary	1st time	outdoor	20	female	unmarried	urban	ludhiana	punjab	hindu	garg	baniya	B.A. 2nd year	student	temporary	Low hemoglobin	no	1
461	november	voluntary	1st time	outdoor	40	female	married	urban	ludhiana	punjab	jain	jain	jain	12th pass	housewife	permanent	Hypothyroidism	no	4
462	november	voluntary	repeat	outdoor	52	male	married	urban	ludhiana	punjab	jain	jain	jain	B.Com pass	charted accountant	temporary	vein not found	no	7
463	november	voluntary	1st time	outdoor	20	female	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Com. 3rd yr	student	temporary	post covid-19	no	8
464	november	voluntary	1st time	outdoor	23	male	unmarried	urban	ludhiana	punjab	sikh	grewal	jatt	M.A. 1st yr	student	temporary	dengue	no	4
465	november	voluntary	1st time	outdoor	18	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	12th	student	temporary	fever	no	4
466	november	voluntary	repeat	outdoor	30	male	married	urban	ludhiana	punjab	hindu	kumar	Ad dharmi	LLB	lawyer	temporary	blood donation interval < 3months	no	7
467	november	voluntary	1st time	outdoor	26	female	unmarried	rural	ludhiana	punjab	sikh	singh	Gujjar	B.Sc. Pass	service	temporary	dengue	no	4
468	november	voluntary	repeat	outdoor	46	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.A. pass	bussiness	temporary	uncontrolled diabeteis mellitustype 2	no	4
469	november	voluntary	repeat	outdoor	43	male	married	urban	ludhiana	punjab	hindu	kumar	arora	MBA	service	permanent	celiac disease, allergic skin disease	no	4
470	november	voluntary	repeat	outdoor	22	male	unmarried	rural	nawanshahr	punjab	hindu	sehgal	khatri	12th pass	bussiness	permanent	hypertension	no	4
471	november	voluntary	1st time	outdoor	21	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Com 2nd yr	student	permanent	Epilepsy	no	4
472	november	voluntary	1st time	outdoor	47	female	married	urban	ludhiana	punjab	sikh	dang	jatt	12th pass	service	temporary	hystrectomy surgery	no	5
473	november	voluntary	1st time	outdoor	48	male	married	urban	ludhiana	punjab	sikh	singh	jatt	B.A. pass	bussiness	permanent	thyroidectomy surgery , on thyroxine	yes	4,5
474	december	replacement	1st time	indoor	35	male	married	urban	ludhiana	punjab	sikh	singh	rajput	M.A.,B.Ed.	service	temporary	sore throat, on antibiotics	yes	4
475	december	voluntary	repeat	indoor	20	male	unmarried	urban	ludhiana	punjab	hindu	kawatra	khatri	B.A. 2nd year	student	permanent	polycythemia vera	no	4
476	december	replacement	1st time	indoor	28	male	unmarried	urban	ludhiana	punjab	sikh	singh	mazhabi	10th pass	driver	temporary	QNS	no	7
477	december	replacement	1st time	indoor	28	male	married	rural	sangrur	punjab	sikh	singh	brahmin	B.Com pass	service	temporary	QNS	no	7
478	december	replacement	repeat	indoor	40	male	married	rural	solon	himachal pradesh	hindu	kumar	arora	B.Pharmacy	bussiness	temporary	asthmatic attacks, on steroids	yes	4
479	december	replacement	repeat	indoor	42	male	married	rural	moga	punjab	sikh	singh	mazhabi	B.A. pass	service	temporary	blood donation interval < 3months	no	7
480	december	replacement	repeat	indoor	40	male	married	rural	ludhiana	punjab	sikh	singh	jatt	12th pass	farmer	temporary	dengue	no	4
481	december	replacement	repeat	indoor	42	male	married	rural	ludhiana	punjab	sikh	singh	jatt	10th pass	bussiness	temporary	depression	no	4
482	december	replacement	1st time	indoor	37	female	married	urban	ludhiana	punjab	sikh	kaur	arora	MBBS	doctor	temporary	abortion	no	3
483	december	replacement	1st time	indoor	25	male	unmarried	urban	ludhiana	punjab	hindu	sharma	brahmin	BCA	service	temporary	kidney stone surgery	no	5
484	december	replacement	repeat	indoor	24	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	B.Com pass	bussiness	temporary	intravenous drug abuser	no	6
485	december	replacement	1st time	indoor	23	male	unmarried	rural	ludhiana	punjab	sikh	singh	jatt	B.Tec.	student	temporary	chickenpox	no	4
486	december	replacement	repeat	indoor	40	male	married	rural	pathankot	punjab	sikh	singh	rajput	B.Sc. Pass	service	temporary	allergic skin disease, on isotretinoin	yes	4
487	december	replacement	repeat	indoor	40	male	married	urban	ludhiana	punjab	hindu	kumar	Ramdasia	B.Com pass	charted accountant	temporary	vein not found	no	7
488	december	replacement	repeat	indoor	60	male	married	rural	amritsar	punjab	sikh	singh	jatt	10th pass	farmer	self deferral	femur fracure, road side accident	no	5
489	december	voluntary	1st time	indoor	32	male	married	rural	sirsa	haryana	sikh	kaur	jatt	B.Sc. Nursing	service	temporary	Low hemoglobin	no	1
490	december	replacement	1st time	indoor	25	male	unmarried	urban	jammu	jammu and kashmir	hindu	goswami	brahmin	B.A. pass	bussiness	permanent	hypertension	no	4
491	december	replacement	1st time	indoor	17	male	unmarried	urban	jammu	jammu and kashmir	sikh	singh	arora	12th	student	temporary	underage, low weight	no	2
492	december	voluntary	1st time	indoor	30	male	married	urban	ludhiana	punjab	sikh	singh	Ad dharmi	BCA	service	temporary	dengue	no	4
493	december	voluntary	1st time	indoor	26	male	unmarried	urban	ludhiana	punjab	sikh	singh	jatt	BCA	service	temporary	typhoid	no	4
494	december	replacement	1st time	indoor	28	male	unmarried	rural	jalandhar	punjab	sikh	singh	jatt	B.A. pass	farmer	temporary	fever , NSAIDS	yes	4
495	december	replacement	repeat	indoor	38	male	married	urban	ludhiana	punjab	hindu	singla	baniya	B.A. pass	bussiness	temporary	viral hepatitis , Hepatitis A Virus	no	4
496	december	replacement	1st time	indoor	30	male	unmarried	urban	ludhiana	punjab	sikh	singh	kumhar	B.Sc. MLT	service	temporary	post covid-19	no	8
497	december	voluntary	1st time	indoor	46	male	married	urban	jammu	jammu and kashmir	hindu	bhatt	brahmin	M.A.,B.Ed.	service	permanent	coronary artery disease, on aspirin	yes	4

S.no.	Date	Type of Donation	1st/ Repeat	indoor/ outdoor	Age	Gender	Marital status	locality	city	state	Religion	surname	caste	Education	Occupation	Deferral type	Cause	medication	category
498	december	replacement	1st time	indoor	18	male	unmarried	rural	moga	punjab	sikh	singh	jatt	12th	student	temporary	laproscopic appendectomy surgery	no	5
499	december	replacement	repeat	indoor	18	male	unmarried	rural	ludhiana	punjab	hindu	kumar	Ravidasia	12th	student	temporary	allergic skin disease	no	4
500	december	voluntary	repeat	indoor	21	male	unmarried	urban	ludhiana	punjab	sikh	thakur	rajput	B.SC. 3rd yr	student	temporary	dengue , post covid-19	no	4, 8
501	december	replacement	repeat	indoor	40	male	married	urban	amritsar	punjab	hindu	sharma	brahmin	B.Sc. Pass	service	temporary	cough, cold	no	4
502	december	voluntary	repeat	indoor	32	male	married	urban	ludhiana	punjab	sikh	singh	mazhabi	B.Sc. Nursing	service	temporary	tattooing	no	6
503	december	voluntary	1st time	indoor	25	male	unmarried	urban	moga	punjab	sikh	singh	rajput	MBA	service	permanent	diabeteis mellitus type 1 , on insulin	yes	4
504	december	replacement	repeat	indoor	38	male	unmarried	rural	fatehgarh sahib	punjab	hindu	arora	arora	B.A. pass	bussiness	temporary	dog bite	no	4
505	december	replacement	1st time	indoor	33	male	married	rural	sangrur	punjab	sikh	sandhu	jatt	BCA	service	temporary	dental procedure	no	5
506	december	replacement	1st time	indoor	22	male	unmarried	rural	jalandhar	punjab	hindu	arora	arora	B.A. 2nd year	student	self deferral	anxiety	no	4
507	december	replacement	1st time	indoor	32	male	married	urban	ludhiana	punjab	hindu	sharma	brahmin	B.Pharmacy	bussiness	temporary	ear piercing	no	6
508	december	replacement	repeat	indoor	39	male	married	rural	ludhiana	punjab	hindu	kumar	balmiki	MBBS	doctor	temporary	herniorraphy surgery	no	5
509	december	voluntary	1st time	outdoor	22	male	unmarried	urban	ludhiana	punjab	sikh	kaur	jatt	B.A. 2nd year	student	temporary	Low hemoglobin	no	1
510	december	voluntary	repeat	outdoor	54	male	married	rural	ludhiana	punjab	sikh	singh	jatt	B.Com pass	service	temporary	Low hemoglobin	no	1
511	december	voluntary	1st time	outdoor	35	female	married	urban	ludhiana	punjab	hindu	gupta	baniya	B.A. pass	housewife	temporary	Low hemoglobin	no	1
512	december	voluntary	repeat	outdoor	38	male	married	urban	ludhiana	punjab	sikh	singh	jatt	LLB	advocate	temporary	post covid-19	no	8
513	december	voluntary	1st time	outdoor	19	female	unmarried	urban	ludhiana	punjab	hindu	garg	baniya	BBA	student	temporary	Low hemoglobin	no	1
514	december	voluntary	1st time	outdoor	19	female	unmarried	urban	kotakpura	punjab	hindu	bansal	baniya	BBA	student	temporary	dengue	no	4
515	december	voluntary	repeat	outdoor	52	male	married	urban	ludhiana	punjab	hindu	bhatia	brahmin	M.A. pass	bussiness	temporary	Low hemoglobin	no	1
516	december	voluntary	1st time	outdoor	28	male	unmarried	rural	ludhiana	punjab	sikh	singh	Ramdasia	B.A. pass	service	temporary	post covid-19	no	8
517	december	voluntary	repeat	outdoor	28	male	unmarried	urban	ludhiana	punjab	muslim	khan	sunni	12th pass	labourer	temporary	blood donation interval < 3months	no	7
518	december	voluntary	repeat	outdoor	26	male	unmarried	urban	ludhiana	punjab	hindu	singla	baniya	B.Pharmacy	bussiness	permanent	HIV	no	6

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No. BFUHS/2K21p-TH/ 5224 **Date** 20/4/2021

The Principal,
DMC,Ludhiana.

Subject: **Approval of Plan of Thesis.**

This is to inform you that the Faculty of Medical Sciences in its meeting held on 22.01.2021 has approved the plan of thesis of **Dr. Gurika**, a student of your college for **MD Immuno Haematology & Blood Transfusion** along with the names of Supervisor/Co-Supervisor as under:-

Topic Plan of Thesis
To evaluate and analyze the blood donor deferral pattern and its causes among blood donors

Supervisor
Dr. Sonia Gupta
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Co-Supervisor
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The student has to submit the three copies of thesis (along with PDF format) , to the Controller of Examinations, BFUHS, Faridkot, at least six months before the commencement of theory examination, if he/she is otherwise eligible to take the examination. He /She must directed to attach a photocopy of this letter with the forwarding letter while submitting thesis to the University along with the letter of approval of University for change of supervisor/Co-Supervisor, change of topic,(if any).

Dr. S P Singh MS(Oph)
Controller of Examinations

Note :

1. ***If any discrepancy found regarding topic of thesis or Supervisor/Co-Supervisor, inform undersigned within one month after issue of this letter.***
2. *The student may submit the thesis as per the schedule already conveyed i.e for May/June examination 30th Nov of the preceding the year of examination and for Now/Dec examinations 31st May of the year of examination.*

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TO EVALUATE AND ANALYZE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS

THESIS PROPOSAL

FOR APPROVAL OF SUBJECT OF THESIS TO BE SUBMITTED IN

PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MD

In

IMMUNOHEMATOLOGY AND BLOOD TRANSFUSION

OF THE

BABA FARID UNIVERSITY OF HEALTH SCIENCES

FARIDKOT

NOVEMBER, 2019

DR. GURIKA

DEPARTMENT OF IMMUNOHEMATOLOGY AND BLOOD TRANSFUSION
DAYANAND MEDICAL COLLEGE AND HOSPITAL
LUDHIANA

ABSTRACT OF PLAN OF THESIS

Title	TO EVALUATE AND ANALYZE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS
For the degree of	MD (IMMUNOHEMATOLOGY AND BLOOD TRANSFUSION)
Name of the candidate	Dr. Gurika
Supervisor	Dr. Sonia Gupta, Associate Professor, Department of IHBT, DMCH, Ludhiana
Co-supervisor	Dr. Amarjit Kaur, Professor & Head, Department of IHBT, DMCH, Ludhiana Dr. Rajesh Kumar, Professor, Department of IHBT, DMCH, Ludhiana
Institution	Dayanand Medical College and Hospital, Ludhiana
University	Baba Farid University of Health Sciences, Faridkot

Introduction: Blood donor selection criteria based on science and regulatory rules influence donor as well recipient safety and demographics. Deferral lead to loss of precious whole blood donors and blood units available for transfusion purposes. Knowledge about the rate and causes of donor deferral can guide us the recruitment and retention strategy for whole blood donors.

Aims & Objectives: To evaluate and analyze the blood donor pattern and its causes among blood donors and to review its influence on blood safety.

Material & Methods: A prospective analysis of records of the donors, for 1 year, from January To December 2020 is to be done, in order to find out the rate and causes of deferral in different age groups.

Clinical Significance: The pattern of donor deferral identified is an important tool for blood safety and also provides key areas to focus on a region or policy formulation nationally for donor selection as well ensure donor safety. The value of determining donor deferral pattern by categories described is in calling back donors deferred due to temporary reasons and can help retain pool of motivated blood donors.

Keywords: Blood safety, blood donors, donor deferral, donor selection, permanent deferral, temporary deferral.

(Signature)	(Signature)	(Signature)	(Signature)	(Signature)
Candidate	Co-supervisor	Co-supervisor	Supervisor	Principal

CERTIFICATE OF FACILITIES AVAILABLE

This is to certify that the facilities for work on the subject of thesis titled **"TO EVALUATE AND ANALYSE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS"** exist in the Department of IHBT, DMC&H, Ludhiana and will be provided to the candidate. We will see that the data being included in the thesis is genuine and is collected by the candidate herself under our supervision and guidance.

Supervisor

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Date: _____

APPROVAL PROFORMA
BY RESEARCH & ETHICAL COMMITTEE
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Name of candidate	Dr. Gurika
Department	IHBT
Topic of Thesis	TO EVALUATE AND ANALYZE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS
Likely date of appearing in PG examination	May 2022
Date of enrollment	13th May, 2019
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Dr. Jaspal Singh (Professor & Head, Surgery)	Mr. A K Jindal (Member, Ethics Committee)
Dr. Dinesh Gupta (Professor & Head, Medicine)	Dr. Anu Sharma (Professor, Anatomy)
Dr. Sandeep Kaushal (Assistant Dean Academics)	Dr. Deepinder K Chhina (Professor & Head, Microbiology)
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Approved: Yes / ~~No~~

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BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT

PROFORMA FOR REGISTRATION OF SUBJECT FOR DISSERTATION

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2	NAME OF THE INSTITUTE	DAYANAND MEDICAL COLLEGE AND HOSPITAL, LUDHIANA
3	COURSE OF STUDY AND SUBJECT	MD IMMUNOHEMATOLOGY AND BLOOD TRANSFUSION
4	DATE OF ADMISSION OF COURSE	13-05-2019
5	TITLE OF THE TOPIC	TO EVALUATE AND ANALYZE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS.

6. BRIEF RESUME OF THE INTENDED WORK

6.1 NEED FOR THE STUDY

In current medical and surgical practice, a blood transfusion can be a vital, life-saving procedure. However, it requires an adequate supply of safe blood which is ensured by exercising donor deferral criteria and screening of transfusion transmitted infections (TTI). The National AIDS Control Organization's (NACO) statistics show that the annual rate of blood donation in India is about 7.4 million units, against the requirement of 10 million units.[1]

Voluntary blood donation is the donation of whole blood or voluntarily without inducement or reward.[2] According to World Health Organization (WHO) figures, Globally, over 81 million donations of blood are collected annually, but only 45% of these are donated in developed and transitional countries, where 81% of the world's population live.[3] A blood bank plays a pivotal role in ensuring the supply of safe blood as and when required. However given the ever changing socio-economic environment and human factors involved, healthy donor recruitment and retention is a challenge that faces the health industry today.[4] Hence studying the profile of blood donors will help identifying sections of population which could be targeted to increase the pool of voluntary blood donors.

While it is important to ensure that there is an adequate supply of blood, it is also essential that the blood collection process does not harm either the donor or the recipient. This is achieved by having donor deferral criteria[5] and stringent screening of collected blood for possible TTIs.[6] Deferrals may be for a defined interval of time or an indefinite period, or they may be permanent with no potential for reinstatement as a blood donor in the future.

But Blood donor deferral is a painful and sad experience for the blood donor as well as the blood centre screening the donor. These deferrals "bleed" the donor-recruiting efforts of a blood centre, necessitating more efforts diverted to new recruitments. Moreover, deferring prospective donors often leaves them with negative feelings about

themselves as well as the blood donation process.[7] Additionally these donors are less likely to return for blood donation in future.[8] Nonetheless, criteria for these deferrals and their implementation strongly influence the quality of blood supply in a population.

6.2 REVIEW OF LITERATURE

Blood safety has received major attention from the point of view of transfusion-transmitted infections, but it has been argued that the most important advancement in this area of medicine has been the collection of blood from nonremunerated repeat voluntary blood donors in the past 50 years instead of paid professional donors.[9] This process of blood donation involves voluntary and nonremunerated blood donors coming forward to donate blood willingly and the choice when and where to donate is dependent on blood donors' positive action.[10] However, the transfusion services have a process of donor selection based on criteria of subjecting donors to a questionnaire, physical examination, and haemoglobin testing before blood donation, and only those who meet the requirements qualify as blood donors. Blood donor suitability criteria are based on science, informed medical opinion and regulatory rules influence donor demographics and lead to specific deferral pattern.[11] They are designed to protect both the blood donors and blood recipients from harm. The criteria are also important for blood safety (microbiological safety of the blood), and there is a need to defer blood donors to protect the recipients from getting transfusion-transmitted infections. The criteria for prospective blood donor selection and deferral in India are provided by the Drugs and Cosmetic Act 1940 (and rules thereunder) supplemented by the Standards for Blood Banks and Blood Transfusion Services.[12] The policies of recruitment and retention of blood donors depend on the deferral pattern in any given area. This laid emphasis on determination of rate and causes of deferral of donors to work as strategy making efforts for recruitment and retention of blood donors both regionally and nationally.[13]

The potential blood donors presenting themselves at the hospital blood bank or the outdoor camps and deferred due to temporary or permanent donor deferral criteria will be included in the study analysis. For collection of whole blood initially, the donor selection standard operating procedure will be followed.

Domen et al, indicate that shared donor deferral registries may be valuable at the local or regional level to prevent deferred blood donors from donating at other blood collection facilities.[14]

It is important to analyze the donor deferral criteria in specific demographic areas in the categories described unique to the area so as to develop a safe pool of blood donors as well to bring back donors deferred due to temporary causes and minimize loss of blood donors and keep them motivated.

The major cause for deferral mostly is consumption of medications in the past 72 hours. Hence it is imperative that potential donors be equipped with knowledge pertaining to deferral criteria as this might help eliminate the rejection factor when one is deferred and increases the probability of returning at a later date.

Regular blood donors make the best group of blood donors, and low haemoglobin levels are the most important reasons for temporary deferral in most studies.

Anaemic patients also constituted a major deferred group. Anaemia is very prevalent in a developing country like India[15] and this is a significant cause for deferrals among donors who come forward enthusiastically for donation, but are unable to donate. Referring these cases to a physician for evaluation and treatment of anemia and asking them to donate at a later date is pivotal in ensuring donor recruitment and retention.

Thus, combining anemia prevention and treatment in donor recruitment strategies could help regain the donors and develop a healthy blood donor pool. Efforts to increase the hemoglobin in the repeat donors has the potential to improve the donor retention and increase overall blood safety.[16]

Hypertension being a modern epidemic often goes undiagnosed and is an incidental finding in most cases.[17] Under permanent deferral, hypertension was the most common cause of deferral. Two Indian studies report that history of jaundice was the most common cause of deferral in Chandigarh[18] and Lucknow.[19]

Having a tattoo has been associated with serological evidence of hepatitis B and C viruses, as well as HIV infection and syphilis, all these are known to be transmissible by blood transfusion. These associations are of higher magnitude for individuals having two or more tattoos unprofessionally applied and are common among drug addicts and prisoners.[20]

Donor self-deferral is valid for reducing the risk of HIV transmission through blood transfusions and its implementation should be encouraged, when recruiting blood donors.[21]

There are many healthy voluntary blood donors above 60 years of age who successfully donate blood. Garry et al, advice elderly healthy individual to donate but to limit donations to less than five per year or donors are advised to take iron supplement regularly to preserve reasonable amount of iron reserve.[22]

Deferral is a form of rejection and also could be a representation of loss of time for both blood donors and blood bank and the importance of explaining the status of deferral cannot be ignored.[23] Donor deferral rates in blood centres vary from 5 to 24%[24] leading to huge losses in terms of available blood units for transfusion in the nation every year. IEC material providing information and education on causes and duration of deferral may "prime" prospective donors about possibility of deferral. Any such sensitization beforehand results in better acceptability of "rejection" and thereby less "negative" feeling about blood donation and more chances of future return. Dorothy et al,[25] supported this view that medical examination may actually serve as an incentive for future repeat donations. All selected or deferred donors who are given an explanation, feel motivated to check their eligibility to donate blood and return for future donation.

Different rates and reasons of donor deferral may be attributed to different donor selection criterion in different regions and centres. Donor recruitment strategies with more liberal criterion without affecting blood safety may reduce the number of deferrals. Efforts must be taken to increase awareness among deferred donors and to encourage them for future donations. The analysis of the pattern of deferral and

interventions to bring back deferred donors when possible could be a strategy for long-term retention of motivated blood donors.

Young donors majority being students, they could be motivated to become regular voluntary donors.

Thus in order to increase the number of voluntary, non-remunerated, low-risk donors a concerted effort by all parties concerned is essential in raising awareness regarding the importance of voluntary blood donation. This includes advertising campaigns and distribution of brochures stating the requirement of blood products in the area and clarifying myths about blood donations. Furthermore, non-monetary incentives such as pre- donation medical check-ups and testing could be provided to nurture the habit of regular blood donation in our population.

6.3 AIMS AND OBJECTIVES OF THE STUDY

1. To evaluate and analyze the blood donor deferral pattern and its causes among blood donors.

7. MATERIALS AND METHODS

Data will be analyze prospectively for whole blood donations over a period of 1 year, from January to December 2020.

Donors presenting at indoor as well as outdoor blood donation locations will be included in the study.

7.1 Source of Data

Data for whole blood donors presenting for donation in blood collection centre and outdoor camps over one year will be analyzed.

National guidelines used for selection and deferral of whole blood donors.

7.2 METHOD OF COLLECTION OF DATA

Donor counselling and screening through questionnaire before donation is an important process to ensure blood safety. The deferred donors are informed about the reason of deferral and counselled accordingly. The potential blood donors presenting themselves at the Department of Immunohematology and blood transfusion in our hospital or the outdoor camps, deferred due to temporary or permanent donor deferral criteria as per Blood Donor Questionnaire will be included in the study analysis. For collection of whole blood initially, the donor selection standard operating procedure will be followed.

INCLUSION CRITERIA

- Voluntary and Replacement/Related Donors.

EXCLUSION CRITERIA-

- Autologous, Directed, Apheresis Donors.

DURATION OF STUDY

- 1 Year (Jan 2020 up to Dec 2020)

OUTCOME

It is important to determine the rate and causes of whole blood donors' deferral to guide the recruitment and retention efforts at local, regional and national level.

STATISTICAL ANALYSIS

Data will be described in terms of range; mean ± standard deviation (± SD), frequencies (number of cases) and relative frequencies

(percentages) as appropriate. All statistical calculations will be done using SPSS (Statistical Package for the Social Science) SPSS 21 version statistical program for Microsoft Windows.

7.3 DOES THE STUDY REQUIRE ANY INVESTIGATIONS OR INTERVENTIONS TO BE CONDUCTED ON PATIENTS OR OTHER HUMANS OR ANIMALS? IF SO, PLEASE DESCRIBE BRIEFLY.

Not Applicable

7.4 HAS ETHICAL CLEARANCE BEEN OBTAINED FROM YOUR INSTITUTION IN CASE OF 7.3?

Not Applicable

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BLOOD DONOR QUESTIONNAIRE

DAYANAND MEDICAL COLLEGE AND HOSPITAL , LUDHIANA

DEPT. OF IMMUNOEMATOLOGY AND BLOOD TRANSFUSION

LICENCE no. 1863-B

THANK YOU FOR COMING FORWARD TO DONATE BLOOD

To ensure your safety as a blood donor and the safety of the patients who will receive your blood. Please read the information leaflet provided and answer this questionnaire correctly. If you have any difficulty in filling this form please ask for help from the Blood Centre Staff. All details given by you will be kept confidential.

DONOR'S NAME: _____

DATE OF BIRTH: _____

	SEX:
	AGE:

ADDRESS(RESIDENCE): _____

ADDRESS(OFFICE): _____

_____

CONTACT NO.(RESIDENT): _____ (OFFICE) _____ (MOBILE) _____

EMAIL: _____

1. Have you donated Blood previously? Yes No

1.1 If yes how many times 1.2 Date of last donation:

1.3 Did you experience any ailment, difficulty or discomfort during previous donation?

1.4 What was difficulty?

1.5 Have you ever been advised not to donate blood? Yes No

2.1 Are you feeling well today?

2.2 Have you eaten anything in the last 4 hours?

2.3 After donating blood do you have to engage in heavy work, driving heavy vehicle or work at heights today Yes No

Signature of Candidate **Signature of Supervisor**

3. Have you had/ have any of the following? If yes, discuss with the doctor present:

• Allergy	• Kidney disease	• Endocrine disease	• Leprosy
• Cancer	• Mental illness	• Diabetes	• Epilepsy
• Fainting attacks	• amoebiasis	• Syphilis	• Tuberculosis
• Heart disease	• cold/cough	• Gonorrhoea	• Polycythaemia
• Lung disease	• liver disease	• Skin disease	• G-6 PD defi.
• Asthma	• fever	• High/low BP	• blood/bleeding Disorder

4.During past 12 months have you had any of the following?

4.1 Received blood or blood component ?	yes	no
4.2 Any accidents or operations?	Yes	no
4.3 Received any vaccinations?	Yes	no
4.4 Bitten by animal, which can result in rabies?	Yes	no
4.5 had tattooing/ ear piercing or acupuncture treatment?	Yes	no
4.6 have you been imprisoned for any reason?	Yes	no

5.have you had jaundice in the last 1 year?	Yes	no
5.1 has your blood ever tested positive for hepatitis B or C	yes	no
5.2 have you had close contact with anyone (family/ other) Suffering from jaundice in the last 1 year?	Yes	no
6. have you had tuberculosis or typhoid during the last year?	Yes	no
7. have you had malaria or taken antimalarial drugs in the last 3 years?	Yes	no
8. have you had any of the following in the last 6 months?		
Dental procedure	yes	no
Measles	yes	no
Chicken pox	yes	no
Dengue	yes	no
9. have you taken any medication in the last 7 days especially or antibiotics?	Yes	no
10. do you know that you should not give blood in following conditions?	Yes	no

Signature of Candidate **Signature of Supervisor**

- If you were found to be HIV positive, Hepatitis B, C or Syphilis infections
- If you are having sex partners or have engaged in male to male sexual activity
- If you have ever worked as a sex worker or had sex with a sex worker
- If you have ever injected any drug (esp. narcotics) not prescribed by a qualified doctor
- If you suspect that you or your partner may have HIV or any other sexually transmitted disease

11. do you or your sexual partner belong to any of the above or below categories ? Yes no

11.1 do you have any reason to believe that you have been infected by the virus that causes AIDS? Yes no

11.2 in the last 6 months have you had:

Night sweats	yes	no
Persistent fever	yes	no
Unexplained weight loss	yes	no
swollen glands	yes	no
persistent diarrhoea	yes	no

12. in case you are a women:

a. Are you pregnant or have you had an abortion in the last 6 months yes no

b. Have you a child less than 1 year of age ? Are you breast feeding? Yes no

consent

I understand that :

a) Blood donation is a totally voluntary act and no inducement or remuneration has been offered.
b) Donation of blood /components is a medical procedure and that by donating voluntarily, I accept the risk associated with this procedure.
c) My donated blood, blood and plasma recovered from my donated blood may sent for plasma fractionation for preparation of plasma derived medicinal products, all of which may be used for larger patient population and not just this blood bank.
d) My blood will be tested for Hepatitis B, Hepatitis C, Malaria Parasite, HIV/ AIDS and Syphilis diseases in addition to any other screening tests required blood safety.
e) I would like to be informed about any abnormal test results done on my donated blood: yes no

Signature of Candidate

Signature of Supervisor

MEDICAL ASSESSMENT	Name of Medical Officer:	Sign:
Donor's name:		
Weight: kgs	Hb level >12.5g/dl	<12.5g/dl

History check List	Feeling well/adequate sleep (>5hrs)/Last meal within 4 hrs Ever hospitalized Current illness or medication:
Examination check list	Unhealthy look/Pallor/Icterus/alcohol smell Infected wounds/ venepuncture site lesions Pulse:.....beats/min BP: .....mmHg Heart: .....Lungs: .....
Counselling Points	Post donation instructions/ making a regular donor Need for follow up for TTI purposes How to contact for follow up purposes: By a letter/By phone / by e-mail
Outcome	Donor accepted/Temporary deferral/ Permanent deferral
Remarks / Reasons for Deferral:	

Signature of Candidate **Signature of Supervisor**

PROFROMA

S.NO.

Reg. No.

Types of Donation

- Voluntary
- Replacement

1st Time / Repeat donation

Socio - Demographic Profile:

Age

- Below 18 years
- 18-28 years
- 29-38 years
- 39-48 years
- 49-58 years
- 59-65 years

Gender

- Male
- Female
- Transgender

Marital status

- Unmarried
- Married
- Divorced

Locality

- Urban
- Rural

Region

- Punjab
- Himachal Pradesh
- Rajasthan
- Jammu and Kashmir
- Haryana
- Others

Signature of Candidate

Signature of Supervisor

Religion

- Hindu
- Muslim
- Sikh
- Others

Education

- Graduate / Post-graduate
- Intermediate/Post High School Diploma
- High School Certificate
- Middle School Certificate
- Primary School Certificate
- Illiterate

Occupation

- Student
- Housewife
- Service/ Clerk
- Business
- Farmer
- Driver/ Labour
- Social Elite

Deferral

- Self deferral
- Temporary
- Permanent

The deferral criteria used for classifying the causes of deferral in categories 1,2,3,and 4 will be as follows:

1. Donors whose own health might be affected by donating **(category 1)**
2. Donors with risk of transmitting transfusion transmissible infections **(category 2)**
3. Donors with a condition where transmissibility by blood is unknown or donors with diseases or a condition not suitable for blood donation **(category 3)**
4. Sensitive physical and social considerations making donors non suitable for blood donation **(category 4)**

Signature of Candidate **Signature of Supervisor**

Causes of temporary donor deferral

Category 1

- Anemia
- Under weight /<45 kg
- Allergy
- Typhoid
- Last blood donation < 3 months ago
- Weakness/ dizziness
- Menstrual problems
- Underage /<18 years

Category 2

- Malaria
- High risk group

Category 3

- Medicine (antibiotics)
- Infection
- Surgery
- Phlebotomy site not clear
- Dog bite/ vaccination

Category 4

- Under collection/ QNS
- Alcohol

Causes of permanent donor deferral

Category 1

- Blood pressure (high)
- Lung disease/ Tuberculosis
- Epilepsy/ psychiatric problem
- Diabetes
- Heart disease
- Cancer
- Endocrine diseases
- Kidney diseases
- Over age
- History of previous blood donation reaction

Category 2

- Jaundice
- Tattoo

Category 3

- Suspicious identity

Signature of Candidate **Signature of Supervisor**

INFORMED PATIENT CONSENT

Date: _____

I.....D/o, W/o, S/o.....
.....am willing to participate in the study **"TO EVALUATE AND ANALYSE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS"** The procedure with its complications has been explained to me in local vernacular language. I have fully understood that no special tests and extra expenditure in any form, merely for the purpose of thesis is being carried out. I am free to opt out the study any time without assigning any reason.

.....
Signature of the Witness

Name:

.....
Signature of the patient

Signature of Candidate

Signature of Supervisor

मरीज अनुमति फार्म

तिथि _____

मैं _____ पत्नी/पुत्र/पुत्री _____

निवासी _____

इस शोधकार्य "**TO EVALUATE AND ANALYSE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS**" में भाग लेने के लिए सहमत हूँ। मैं इस शोधकार्य में भाग लेने के लिए अपनी स्वेच्छा से तैयार हूँ। मैं पुष्टि करता/करती हूँ की यह स्वीकृति देने के लिए मुझे कोई आर्थिक प्रलोभन नहीं दिया गया और न ही दबाव डाला गया है। मुझे इस शोधकार्य का उद्देश्य स्पष्ट कर दिया गया है और मुझे यह विश्वास है की यह विज्ञान और मानवता के लाभ के लिए है। मुझे इस शोधकार्य में होने वाले जोखिम के बारे में समझा दिया गया है और मेरी समझ में यह जोखिम बहुत मामुली है।

मैं इस शोधकार्य में भाग लेने के सम्बन्ध में किसी भी समय अपनी अस्वीकृति व्यक्त कर सकता/सकती हूँ और मेरे अस्वीकृति व्यक्त करने का मेरे इलाज पर कोई प्रभाव नहीं पड़ेगा।

_____ _____

गवाह के हस्ताक्षर रोगी के हस्ताक्षर/अंगूठे का निशान

नाम: नाम:

_____

अन्वेषक के हस्ताक्षर

_____

विद्यार्थी के हस्ताक्षर

ਮਰੀਜ਼ ਰਜ਼ਾਮੰਦੀ ਫ਼ਾਰਮ

ਮਿਤੀ_____

ਮੈ_____ ਪਤਨੀ/ਪੁੱਤਰ/ਪੁੱਤਰੀ_____

ਵਾਸੀ _____

"TO EVALUATE AND ANALYSE THE BLOOD DONOR DEFERRAL PATTERN AND ITS CAUSES AMONG BLOOD DONORS" ਤੇ ਚਲ ਰਹੀ ਖੋਜ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਰਜ਼ਾਮੰਦ ਹਾਂ। ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਮੈ ਆਪਣੀ ਮਰਜ਼ੀ ਨਾਲ ਤਿਆਰ ਹਾਂ। ਮੈ ਇਹ ਦਸਣਾ ਚਾਹੁੰਦਾ ਹਾਂ/ ਚਾਹੁੰਦੀ ਹਾਂ ਕੇ ਇਹ ਰਜ਼ਾਮੰਦੀ ਦੇਣ ਵਾਸਤੇ ਮੈਨੂ ਕਿਸੇ ਵੀ ਤਰਾਂ ਦਾ ਲੋਭ-ਲਾਲਚ ਨਹੀ ਦਿੱਤਾ ਗਿਆ ਅਤੇ ਨਾ ਹੀ ਕੋਈ ਦਬਾ ਪਾਇਆ ਗਿਆ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਦਾ ਮਨੋਰਥ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਭਰੋਸਾ ਦਵਾਇਆ ਗਿਆ ਹੈ ਕੇ ਇਹ ਖੋਜ ਵਿਗਿਆਨ ਅਤੇ ਮਾਨਵਤਾ ਦੀ ਭਲਾਈ ਲਈ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਵਿਚ ਹੋਣ ਵਾਲੇ ਖਤਰੇ ਬਾਰੇ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਯਕੀਨ ਹੈ ਕੇ ਇਹ ਖਤਰਾ ਬਹੁਤ ਮਾਮੂਲੀ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਢੰਗ – ਤਰੀਕਾ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ।

ਮੈ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਬਾਰੇ ਆਪਣੀ ਰਜ਼ਾਮੰਦੀ ਕਿਸੇ ਵੀ ਸਮੇ ਵਾਪਸ ਲੈ ਸਕਦਾ ਹਾਂ/ ਸਕਦੀ ਹਾਂ ਅਤੇ ਮੇਰੀ ਰਜ਼ਾਮੰਦੀ ਵਾਪਸ ਲੈਣ ਦਾ ਮੇਰੇ ਇਲਾਜ ਤੇ ਕੋਈ ਅਸਰ ਨਹੀ ਹੋਵੇਗਾ।

_____ _____

ਗਵਾਹ ਦੇ ਹਸਤਾਖਰ ਮਰੀਜ਼ ਦੇ ਹਸਤਾਖਰ

ਮਿਤੀ_____ ਮਿਤੀ_____

ਪਤਾ _____ ਪਤਾ _____

_____

ਨਿਰੀਖਕ ਦੇ ਹਸਤਾਖਰ

_____

ਸਿਖਿਆਰਥੀ ਦੇ ਹਸਤਾਖਰ